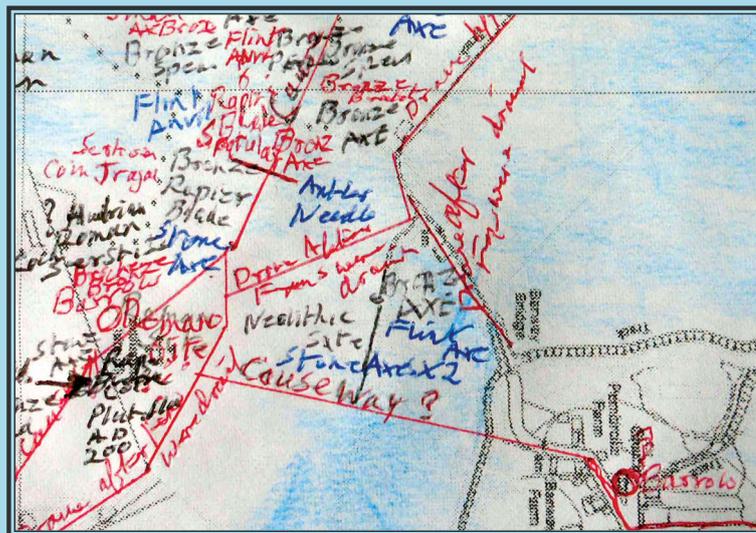
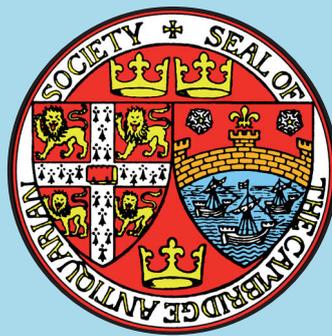

Proceedings of the Cambridge Antiquarian Society

(incorporating the Cambs and Hunts Archaeological Society)

Volume CII
for 2013



**Proceedings of the
Cambridge Antiquarian Society**

(incorporating the Cambs and Hunts Archaeological Society)

**Volume CII
(102)
for 2013**

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Cambridge Antiquarian Society Report for the Year 2012

Membership: There are now 389 members, 61 Associates, 49 Affiliated Societies and 52 subscribing members.

Meetings: There were four Council meetings and nine ordinary meetings. The following lectures were given:

Peter Kitson: *The male occupational structure of Cambridgeshire and Huntingdonshire during the 18th and 19th centuries*

Craig Cessford: *"Such filthy horrid dirty work": archaeology and the 19th century Cambridge College servants*

Tom Williamson: *Explaining regional landscapes: mediaeval fields and farms in Eastern England*

Members of the Twenty Pence Project Team: *A Roman settlement on the Cottenham fen edge: the story so far of an exploration by the Fen Edge Archaeology Group and CAS*

Tom Doig: *Death and Traditional Burial in Victorian Times – the Surviving Evidence?*

David Jacques: *Time and Time again: new insight into the significance of Vespasian's camp in the Stonehenge landscape*

Elizabeth Ashman Rowe: *Old Norse Traditions: Ivar the Boneless and Edmund of East Anglia*

Nicholas Thomas & Imogen Gunn: *Transforming the Museum: a talk about the redevelopment and new displays at the Museum of Archaeology and Anthropology*

Norman Hammond: *Early Maya Household Economy, Society and Culture at Cuella, Belize*

Conferences:

31 March: *From the Ground Up- Contemporary Building Recording, Methods and Practice*

24 November: *Recent archaeological work in Cambridgeshire (Attendance 86)*

Excursions: Two by coach: St Neots, (thanks to the local Museum Society) tour of the town, then Kimbolton Castle, tea at the parish church (18 April). Castle Acre: earthworks of the castle; parish church and priory plus Anglo-Saxon church at Newton, guide the Rev Dr Lynne Broughton (30 June, 20 participants). Others (walks): Reed, Herts, pub lunch, then Nuthampstead USAF airfield, leader Tom Doig, (18 May, 22 participants). King's Lynn: second medieval new town (1145), leader Dr Paul Richards; the Custom House, St George's Guildhall, a well-concealed Norman hall house and St Nicholas' church, tea at True's Yard Museum (5 September. 18 participants). Royston town centre, from the parish church, led by Cllr John Smith. 20 participants (4 October).

Publications: The Society continued to produce Conduit, with copies being sent to the Society's members and groups / societies with an entry therein. An electronic version was published on the Society's website with links to email addresses and websites of those groups & societies. Copies were purchased by the Cambridgeshire Association for Local History and the Huntingdonshire Local History Society for their members. There is a journal exchange programme with other institutions and journals received continue to be deposited in the Haddon Library.

Representatives: Mrs Morris, Cambridgeshire Advisory Group on Archives and Local Studies; Mr Kirby, Cambridgeshire Association for Local History; Mr Goldsmith, Cambridge University (CU) Museum of Archaeology and Anthropology Committee; Dr Oosthuizen, CU Faculty Board of Archaeology and Anthropology; Dr Allen, Cambridgeshire Records Society; Mr Stanford, Council for British Archaeology; Dr Pickles, Haddon Library Committee; Mr Doig, Cambridgeshire Curators' Panel.

Finance: The financial state of the Society at the end of 2012 was sound. The net adjusted cash position, cash at bank and investments at current value, allowing for debtors and creditors totals more than £50,000. The Society is considered to have adequate reserves in relation to an annual turnover from normal activities which for this purpose is taken to be £20,000. There was an operating surplus in 2012 from normal activities of about £800.

Grants for Small Projects: £300 grant awarded to Fen Edge Archaeology Group towards the preparation of each season's work for publication. £200 grant (approximately one third of the whole cost) awarded to Cambridge Archaeology Field Group for a professional assessment of finds from Oily Hall in Bottisham Fen.

Other: A successful collaboration between the Society and the Fen Edge Archaeology Group in the Twenty Pence Project (July 2011) gave members of the Society the opportunity to take part in a practical field archaeology project.

Communications with members: Members who would like to receive news and information by e-mail from the Society from time to time should send their e-mail address to the Registrar at registrar@camantsoc.org.

Governance: The conduct of the Society is governed by Laws dated 1988 (amended 2003, 2008 and 2009). Management is vested in an elected Council whose members' names are published annually on the membership card/ lecture programme.

Gift Aid: Members are reminded that anyone contributing under the Gift Aid scheme and who no longer pays any tax should notify the Registrar.

Cambridge Antiquarian Society Accounts for the Year Ended 31/12/2012

Registered Charity 299211 • Founded 1840

EXPENDITURE	2012	2011
Lectures: Publishing Programme	323.00	564.00
Expenses	<u>765.76</u>	<u>331.40</u>
Total	1088.76	895.40
Proceedings Publication costs	8309.26	7897.36
Delivery	<u>758.26</u>	<u>1601.73</u>
Total	9067.52	9499.09
Conduit	1534.00	2340.63
Conferences	2258.87	1377.11
Excursions	1403.26	1602.12
Mailings: Delivery Charges	150.00	232.77
Subscriptions	104.00	111.78
Office Expenses, Web Site, Misc	350.64	357.88
Honorarium	500.00	0.00
Indexing Costs	729.30	875.00
Insurance	289.31	289.31
Small Grants Scheme	<u>500.00</u>	<u>500.00</u>
Total Expenditure	<u>17975.66</u>	<u>18081.09</u>

INCOME	2012	2011
Subscriptions - Members & Societies	6615.50	6872.90
Tax Reclaimed	562.00	730.08
C.U. Archaeology Dept.	800.00	800.00
Proceedings: Grants	5888.94	6535.00
Conduit	475.00	753.25
Conferences	1517.00	2086.00
Excursions	1382.00	1382.40
Sales of Publications	520.20	641.08
Miscellaneous income	0.00	0.00
National Savings Interest	496.40	1076.63
Treasury Stock Interest	177.52	787.44
Bank Interest	<u>345.21</u>	<u>233.18</u>
Total Income	18779.77	21897.96
Less Expenditure	<u>17976.66</u>	<u>18081.09</u>
Surplus Income over Expenditure	<u>804.11</u>	<u>3816.87</u>

STATEMENT OF ASSETS	2012	2011
Cash Funds: Current Account	6259.72	12045.81
: Deposit Account	31032.66	19687.45
Accrued Income	1967.00	1282.17
Treasury Stock at maturity values	0.00	6987.60
National Savings at valuation	<u>11573.03</u>	<u>11076.63</u>
	50832.41	51079.66
Less Accrued Expenses	<u>165.00</u>	<u>1216.36</u>
	<u>50667.41</u>	<u>49863.30</u>
Accumulated Fund		
At beginning of year	49863.30	46046.43
Surplus Income over Expenditure	804.11	3816.87
At end of year	50667.41	<u>49863.30</u>

The Accumulated Fund includes Restricted Funds as follows:

Ladds Bequest	850.00	850.00
Atlas Gifts	<u>3000.00</u>	<u>3000.00</u>
Total	3850.00	3850.00

S Keith, Treasurer

B. Cloke, Independent Examiner

Volume CII (102), 2013

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This volume of the Proceedings is dedicated to Valory Hurst and Chris Michaelides who have served the Cambridge Antiquarian Society for a number of years as Registrar and Secretary respectively.

Cover: excerpt from Phillip Randall's detailed map of Later Bronze Age artefacts that he has found at Barway over the years.

A Multi-period Landscape at Wadlow Farm, West Wrattling

Nuala C Woodley and Joe Abrams

With contributions by Julie Franklin, Julie Lochrie, Jennifer Richards,
Ian Rowlandson, Laura Bailey, Scott Timpany, Jane Young and
illustrations by Ania Sztromwasser

Investigations undertaken by Headland Archaeology between 2009 and 2011 ahead of the construction of a thirteen-turbine windfarm at Wadlow Farm, West Wrattling revealed evidence for Neolithic, later Prehistoric and Anglo-Saxon activity. The results indicated that the landscape was exploited for its flint during the Neolithic period and for its agricultural potential during the Late Bronze Age to Early Iron Age. Prehistoric features included Neolithic quarry pits and boundary ditches of Iron Age date. An isolated Anglo-Saxon feature was also revealed comprising a Sunken Featured Building (SFB) containing an assemblage of loom weights. The later prehistoric field system had been previously identified by cropmark evidence and the fieldwork confirmed associated agricultural activity. Notably, there is a paucity of known flint quarries in the area (although this is partly due to the difficulty in their recognition) and the results provide insight into Neolithic flint extraction.

Introduction

Investigations at Wadlow Farm, West Wrattling (Figure 1) began with a desk-based study carried out for an Environmental Impact Assessment of the proposed wind farm. The most significant features identified were extensive cropmarks thought to relate to prehistoric or Romano-British field systems and settlement remains. Following aerial photograph plotting, a pre-determination archaeological evaluation by Headland Archaeology (Headland Archaeology 2009) comprised excavation of trial trenches within a 50m radius of each proposed turbine location. A group of Neolithic flint quarry pits was identified at Area A (Figure 2). Groups of features relating to late Bronze Age or early Iron Age settlement were identified at Area D (Figure 3) and ditches (parts of field systems) and pits were more widely distributed, occurring at Areas D, B and E (Figures 3, 4 and 5). An Anglo-Saxon sunken featured building was investigated at Area C.

Planning consent for the thirteen-turbine wind farm was granted, subject to a condition requiring a scheme of archaeological investigation to be undertaken at the site. A Written Scheme of Investigation (WSI) was prepared to meet the requirements for this work, which were set out in a brief issued

by Cambridgeshire Archaeology Planning and Countryside Advice (CAPCA). This comprised open area excavation in specific areas and archaeological monitoring and recording was conducted in areas of ground reduction. Monitoring was also required in other areas of groundworks not previously subject to evaluation, depending on location and depth of disturbance. The archaeological mitigation work took place between August 2010 and August 2011 (Dingwall 2010 and Headland Archaeology 2011).

Site location and description

The site is located approximately 15km south-east of Cambridge with the village of West Wrattling immediately to the east and Balsham approximately 1.5km to the south (Figure 1). It lies at an average height of c. 74m OD and is centred on grid reference TL 5733 5307.

The site can be characterised as slightly rolling, open arable farmland. The geology comprises New Pit Chalk Formation and Holywell Nodular Chalk Formation which is represented by chalk directly below the topsoil across the majority of the site. To the north of the site, Alluvial Fan Deposits lie above the chalk formations and are represented by clay, silt, sand and gravel. These superficial deposits represent a local environment previously dominated by rivers (British Geological Survey Website). The chalk geology contains flint nodule inclusions and the site appears to have been exploited for this natural resource during the Neolithic period and Bronze Age.

Archaeological and historical background

Wadlow Farm is set in a multi-period archaeological landscape with activity in the surrounding area dating from the Palaeolithic through to the post-medieval period. The region contains a number of flint and lithic scatters, mainly on higher ground (Glazebrook 1997, 14). The earliest activity in the area is represented by the discovery of such flint scatters, along with hand axes, dating to the Palaeolithic at Little

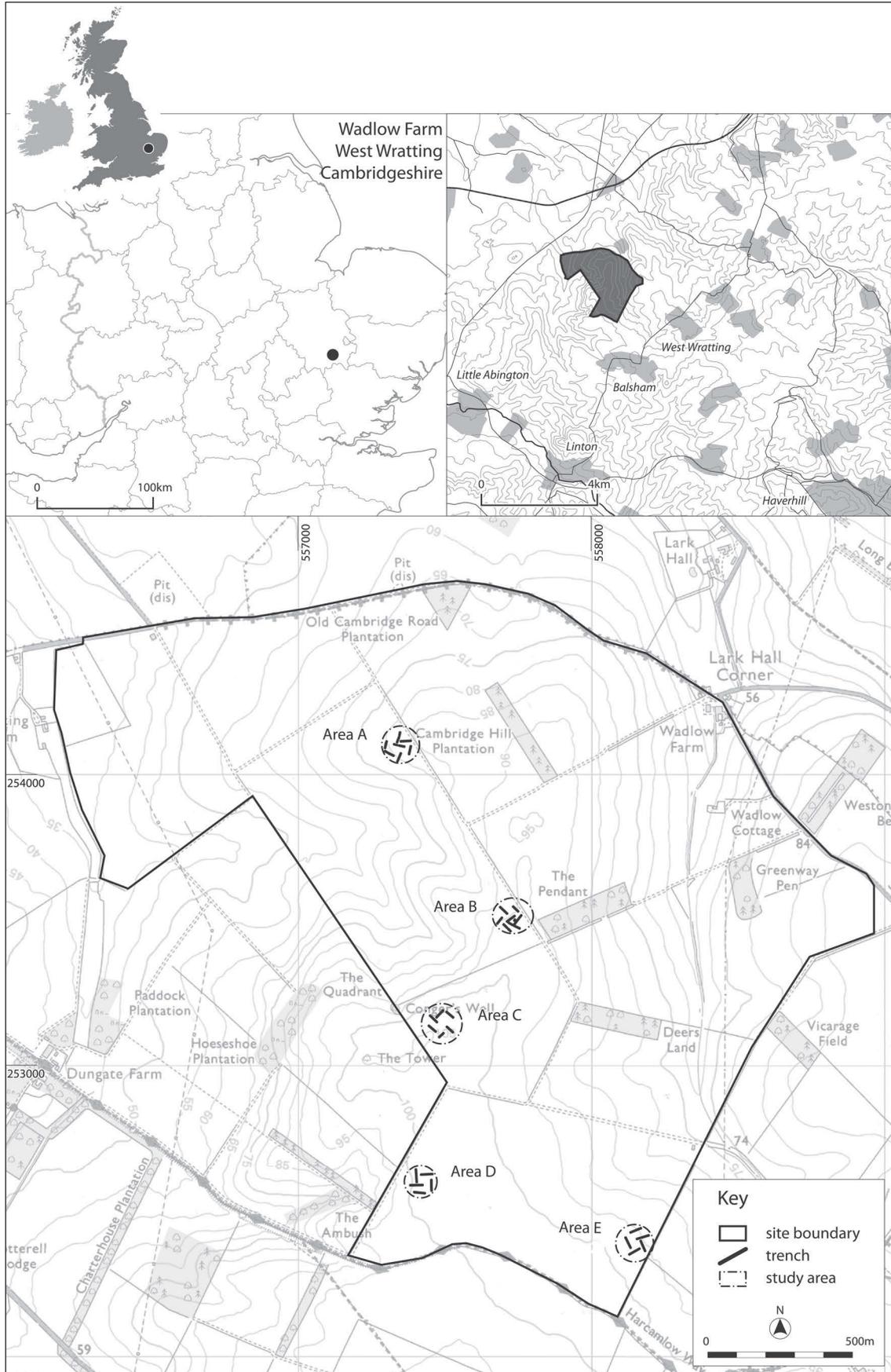


Figure 1. Site location and areas of excavation.

Wilbraham and Rookery Farm (Cambridgeshire Historic Environment Record (CHER) MCB16510, 11775, 06265) to the north-west of the site.

The CHER lists several prehistoric finds and sites within 1km of the site; many of which were identified by cropmarks. To the north-west of the site, at Great Wilbraham a probable Neolithic henge and a double-ditched causewayed enclosure (CHER 06468, 09292) have been recorded through aerial photography.

Other cropmarks have been characterised as Bronze Age round barrows and ring ditches (CHER 06172, 06241, 06246, 06250, 06288, 06487, 09275). These include cremation round barrows recorded at Great Wilbraham (CHER 06320), at Balsham (CHER 06334, 06338), and at Allington Hill, [located 4km to the north of the site] (CHER 06761, 09331, 09332). One of the barrows at Balsham (CHER 06334) was reused for burial in the Roman period.

Nearby Roman activity includes Romano-British occupation at Rookery Farm (CHER 17729) and the Roman road of Worstead Street (Scheduled Ancient Monument (SAM) 26 / CHER 07970). Worstead Street (the Roman Military way) runs from Worts Causeway in Cambridge to Horseheath near Haverhill and runs parallel to the site on an alignment of NW–SE, *c.* 4km to the south-west.

Located on the same alignment as Worstead Street is the Fleam Dyke (SAM 72 / CHER 07889) (*c.* 1km from the site); an earthwork of possible Anglo-Saxon date (Figure 6). The Dyke runs on the same alignment as the Devil's Dyke a similar earthwork located 5km to the north-east of the site at Wadlow Farm (Malim 2003:19). There have been a number of excavations at sections of the Fleam Dyke in the last century (CHER 828, 1246, 11146). These have highlighted the original extent of the dyke as a large scale defensive earthwork that ran for 5km from Balsham to Fulbourn and had at least three phases of construction (Malim 2003:28). Its presence in the landscape marks a boundary or defensive barrier which was likely to have been used in conjunction with the Devil's Dyke during the Anglo-Saxon period. In more recent times, the land at Wadlow Farm has been utilised for agriculture.

Results of the investigations

The text which follows is structured by Phase (Phases 1 to 5) which relate to the chronological periods represented. Features are generally identified by Group (G) numbers (as illustrated in, for example, Figures 2 and 3) assigned to linear features such as continuous ditches and large discrete features such as large pits. Group numbers were also assigned to groups of smaller discrete features such as a group of pits which formed a coherent spatial arrangement and were considered to be contemporary.

Phase 1: Neolithic quarrying (3500 BC – 1500 BC)

Within Area A, in the northern part of the site, (Figure 2), a concentration of features were recorded

which comprised a group of pits cut into the natural chalk (G21). Although not all fully exposed within the investigation area, on average the pits measured 1.70m wide and 0.55m deep. They had an irregular shape in plan, vertical sides (which had been undercut from below the surface of the chalk) and a flat base. A section through one feature found two pits to be intercutting but no stratigraphic relationship was discernible as the backfill of both pits consisted of homogenous, compacted, re-deposited chalk packed tightly into the pits with no voids; homogenous filling of pits usually indicating a prompt backfilling (Thomas 1999, 64).

A large amount of flint, made up almost exclusively of primary testing and reduction waste, was recovered from the backfill; this is representative of the first steps of identification and preparation of flint as a raw material.

Nine small pits of a shallow nature and a tree bowl (G22) were recorded close to G21. These small pits were scattered across the area, forming no obvious structure. They had a maximum diameter of 0.8m and were filled with a greyish brown sandy loam or silty sand. Whilst there was no specific material within the features to suggest function, all the pits contained some worked flint. The presence of the flint, along with their proximity to the quarry pits of G21, may plausibly suggest a similar function (flint extraction).

The complete lithics assemblage recovered from the site numbered 3517 pieces, scattered widely across many context groups (Groups 1, 2, 3, 4, 6, 8, 12, 13, 14, 16, 18, 19, 20, 21, 22, 23, 24). The most significant part of this was the material from Area A which appears to represent the debris from Neolithic flint quarrying (Group 21) through the digging of small pits. The assemblage analysed from this group and nearby features (Groups 20 and 22) numbers 878 pieces and mostly consists of the initial stages of primary reduction.

Catalogue numbers are quoted, in the text and illustrations, in the format 'Cat.123' to identify individual pieces. Classification terminology is as follows; Debitage: pieces which have not undergone any secondary modification (retouch); Flakes: Detached piece with one identifiable ventral surface; Blades: A flake with 2:1 height to width ratio; Chunk: A large indeterminate piece with no clear ventral surface; Chip: Any flake or indeterminate piece <10mm; Core: Artefact with only dorsal surfaces, less than three removals is a split cobble; Tools: Any piece with secondary modification (retouch).

Refits were checked for in every context and noted in a few. Though in most instances only a few pieces conjoined, it should be born in mind that the assemblage represents only a small percentage of the quarry pit scatters and it is likely that many more were present. The presence of refits indicates that this material was *in situ*. The selected assemblage is summarised by feature in Table 1. All features are pits or hollows containing a single fill, except the Iron Age ditch [005] (Group 20).

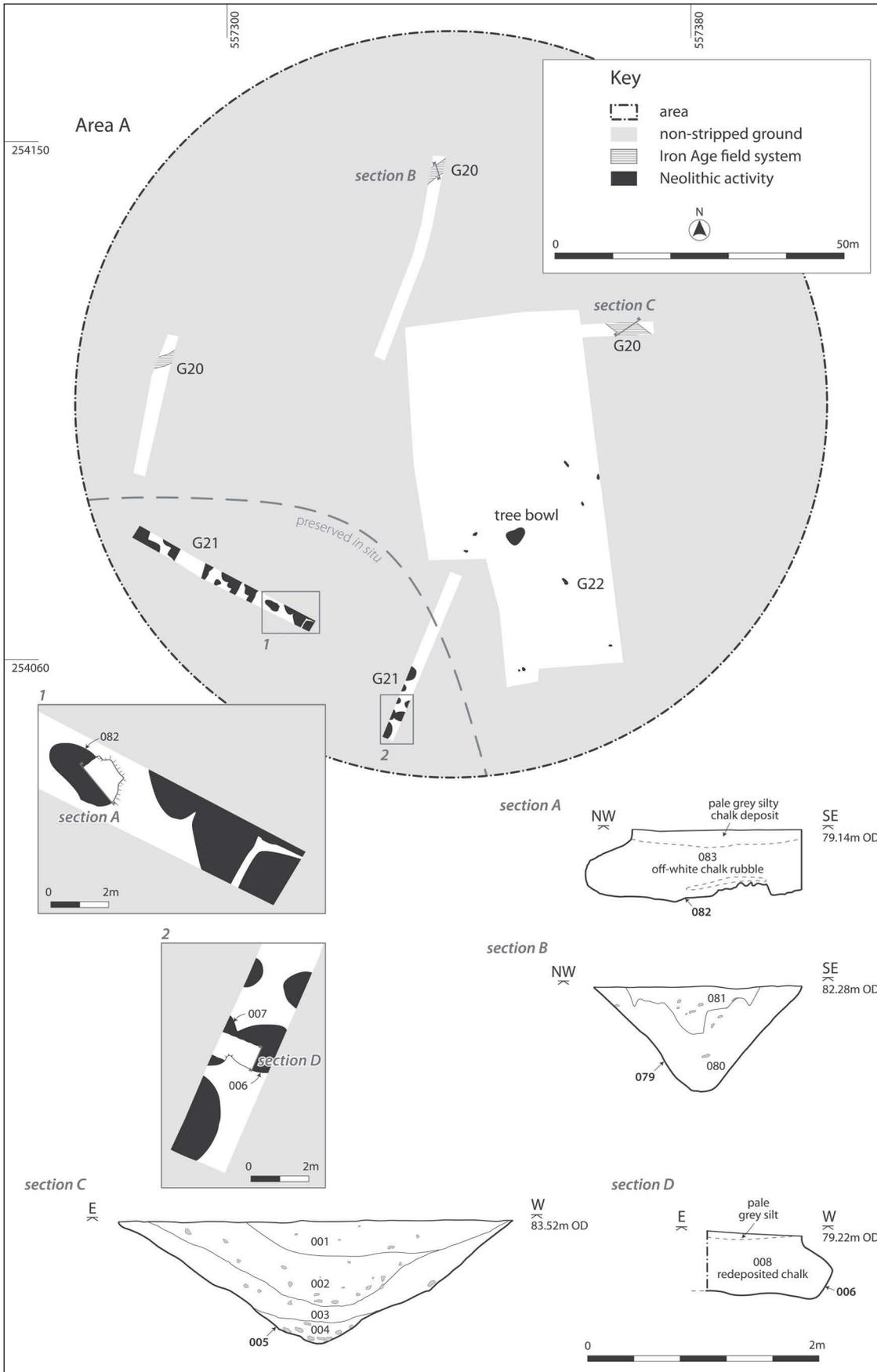


Figure 2. Neolithic and Iron Age activity at Area A.

The features related to quarrying belong to Phase 1 and include pits [006/007] and [082] (both Group 21), and tree throw [016] (Group 22). The quarrying techniques, flint surface patina and what little could be gleaned from typological dating all point towards the Neolithic period for the exploitation of these resources. It is also clear that residual surface scatters associated with this activity account for much of the material found in other features. Furthermore there is evidence that the site was revisited during the Bronze Age during which time the flint from the surface scatters and the surface material of backfilled features was reused.

Flint is the only material used and is entirely sourced from the site. Small to large sub ovoid and irregularly shaped cobbles were present, as well as occasional angular shatter, of which only one example showed any attempt at reduction (in Pit 019). The average dimension of core material (including split cob-

bles) is 79 x 64 x 45mm with the two largest examples measuring 138 x 79 x 59mm and 117 x 116 x 99mm.

The cortex is fairly thick and hard but with a soft chalky exterior and occurs on 83% of pieces. All the flint is patinated although fresh colour is visible on modern breaks and pieces with more recent retouch. When fresh in condition the flint is a dark, translucent black blue but from this site it mostly appears blue white or grey white from severe patination. The quality is fairly variable and can range from fine to coarse grained. Only 34 pieces were burnt, 24 of which were from Ditch [005].

Pit Quarries and Surface Scatters

During evaluation at least 15 probable quarry pits were identified across Trenches 4 and 5. All pits were wider than the trench in which they were discovered so it was not possible to determine their overall shape or dimensions but the sections are strikingly

Table 1. Lithic Summary and Quantification.

Phase	Phase 1												Phase 4	
Group	Group 21			Group 22									Group 20	
Context	Pit 006/007	Pit 082	Surface Flint Trench 5	Pit 016	Pit 006	Pit 012	Pit 014	Pit 004	Pit 019	Pit 021	Pit 025	Pit 027	Ditch 005	TOTAL
Type														
Debitage														
Blades	5	5	2	-	-	-	1	-	-	-	1	1	1	16
Flakes	70	55	37	30	12	16	5	-	73	8	11	27	49	393
Chips		34		2									110	146
Chunk	15	8	1	22	1	7	3	-	33	6	6	18	13	133
Shatter	3	-	-	3	9	4	-	-	26	-	-	-	6	51
Core Rejuvenation Flake	-	1	-	1	-	-	-	-	-	-	-	-	-	2
Core Rejuvenation Blade	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Platform Trimming Flake (core tablet)	1	-	1	-	-	-	-	-	-	-	-	-	-	2
Cores														
Split Cobbles	6	25	-	3	-	1	-	-	1	-	2	7	-	45
Minimally Worked Core	1	12	-	18	-	2	-	-	5	-	1	2	-	41
Single Platform	1	2	-	-	-	-	-	-	-	-	-	-	-	3
Multi-Platform Blade Core	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Multi-Platform Flake Core	1	2	3	-	-	-	-	-	-	-	-	-	-	6
Irregular	2	-	-	1	-	-	-	1	-	-	-	-	5	9
Tools														
Edge retouch	6	3	3	2	-	1	2	-	1	-	2	1	3	24
Scraper	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Notched	1	-	-	-	-	-	-	-	-	1	-	-	-	2
Piercer	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Bifacial edge Retouch	1	-	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL	115	148	47	83	22	31	11	1	139	15	23	56	187	878

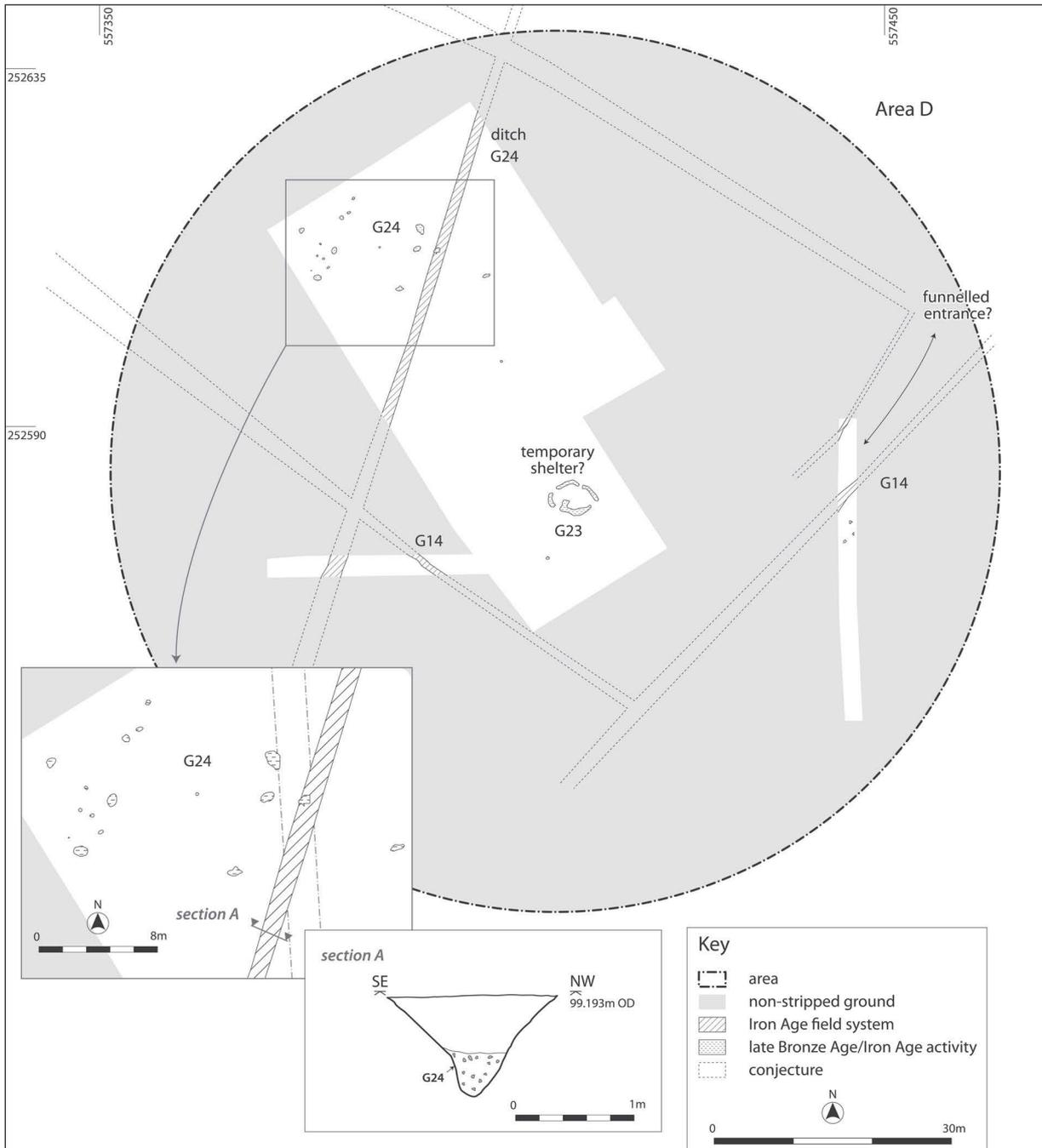


Figure 3. Late Bronze Age/Iron Age activity at Area D.

similar to the small 'bell' or 'boot' shaped quarry pits at Heathfield, Cambridgeshire (McFadden, 1999, 8) and Blackpatch, Sussex (Russell 2001, 40). Most of the small quarry pits discovered range between 0.2–2m in depth. This is comparable to pits found at other flint quarrying sites such as Heathfield (0.22m McFadden 1999, 8), Blackpatch (1.8m, Russell 2001, 39–40), Churchill, Sussex (0.6m, Russell 2001, 124), Tolmere, Sussex (1.9m, Russell 2001, 161) and Myrtle Cove, Sussex (0.6m, Russell 2001, 201).

Possible pick marks in the form of small circular depressions were noted on the base of pit [082]

(Group 21).

Feature [016] (Group 22) has been interpreted as a tree throw, however it had an uneven base and contained large flint nodules similar to that of the quarry pits, suggesting comparable activity and dating.

The flint in the assemblage included examples of partially patinated pieces that have been retouched. The retouched edges are fresh (Figure 7a) suggesting little subsequent use. Examples were found in all three of the quarry features (Pit Group 21 and tree throw Group 22; Figure 2).

Other Features

The other features discovered are all single fill, small, shallow pits of unclear purpose. They contained flint in lesser amounts and of slightly different character to the flint from the quarry pits, i.e. few cores or split pebbles, more flakes, chunks and shatter. Some similarities to the material from the quarry pits and similar patination indicate at least some of the material is contemporary; however they may have been re-deposited in backfill material at a later date. The level of abrasion to the edge of pieces from pit [021] certainly suggests some movement. In addition some of the flint from pits towards the east of the mitigation area, showed flakes scars with a fresh patination, indicating re-use.

Interpretation of flint assemblage

Most of the material relates to first stages in the sequence of reduction. The vast majority of pieces (83%) are cortical and all have been struck with a hard hammer. The flakes are typically large with simple platforms and pronounced bulbs. They far outnumber blades and indicate a flake based industry. Only 17 blades were found, some of which appear to be accidental and are certainly not well executed. This would suggest very little evidence for intentional blade production, as just one blade core was recovered. While flakes account for most of the debitage, there is also a large number of chunks. These are pieces with no identifiable ventral surface which cannot be characterised as cores. They were probably struck freehand from the nodules with little identifiable trace of pattern to the removals. It is likely that this represents initial testing and dressing of the nodules as so much of the assemblage derives from this. The severe patination and chalky concretions, at times, also made some pieces difficult to characterise.

Few small pieces were retrieved although all soil samples processed contained chips, it thus seems likely that chips were in fact far more numerous and widely spread but largely invisible in the heavy soil during hand excavation. The largest concentration was in Iron Age Ditch [005], probably eroding in from the surface scatters. This gives credence to the theory that preparation was happening away from the confined space of the pits, but with so little *in situ* material recovered from the surfaces this can only be surmised. Many pieces from the ditch were burnt, probably during Iron Age activity, as this is not a feature of the rest of the assemblage.

The term "split cobbles" has been used to define nodules with three removals or less (e.g. Cat.553, Figure 7b) while minimally worked cores have more than three removals yet cannot be termed a formal core (e.g. Cat.326, Figure 7c, Cat.423, Figure 7d and Cat.574, Figure 8a). There are comparable levels of each in the assemblage and most were found in the three quarrying features with none found amongst the surface flint. It seems, then, that these represent pieces not selected for further preparation. It does not necessarily follow that these pieces were of poor quality. As has been shown at deep mine sites, the basis

for the selection of raw material 'was far greater than simple resource acquisition' (Leivers 2004) possibly taking factors such as ritual or colour into account. Whilst the shallow quarrying at West Wrattling is different in character to the deep mine sites many of the discarded pieces would have been of sufficient size and quality for most uses and cannot have been rejected on quality alone. Pit [006/007] (Group 21) stands out from the other two quarrying features in this aspect as it contained only seven tested cobbles and had the most formal cores and tools of the quarry pits. This pit also includes the only blade core found on site which may be of earlier Neolithic date. This may be evidence of slightly different activities or dating.

The split cobbles and minimally worked nodules generally follow the same confined pattern of reduction. Any angular or 'knobbly' pieces are flaked off to create a more regular sub-ovoid/rounded shape. After this stage the cobble is sometimes discarded but commonly one or both opposing ends are flaked off. The majority of split cobbles or minimally worked cores go no further than this stage (occasionally the ends are used as a platform for further knapping but this is rarely the case). It is assumed that after carrying out this preparation it would be clear to the knapper whether or not the material was what was required.

'Wedge' shaped pieces were also very common and these were seemingly produced by a similar method to that outlined above. The main difference is that the removals to the ends are positioned at oblique angles, meeting roughly in the centre. These pieces are generally smaller and may be a by-product; but it is also true that the removals have exposed as large an inner surface area as possible. If the original piece was also small this method maximises the workable length.

All the testing and preparation is fairly consistent in approach and thus is all likely to date to the Neolithic period. There are no examples of this happening in later periods. It seems that the Bronze Age exploitation of the flint resources did not involve quarrying fresh nodules.

Of all the cores, only one has been exhausted. The lighter patination on this would seem to suggest a later date for it. The only core used for the production of blades is Cat.323 (Pit [006/007], Figure 8b). It has been used to produce medium sized blades with a probable trapezoidal cross section. It is well established that blade production was common during the Mesolithic and earlier Neolithic, becoming significantly less common in the later Neolithic. Earlier blades from the Mesolithic and beginning of the Neolithic period are very small (Bishop 2007 28–29), while Neolithic blades are generally larger. The type of blades that would have been produced by core Cat.323 are typical of the Neolithic period. The debitage associated with it are mostly large flakes with simple platforms and pronounced bulbs with few blades. None of the other cores help point to a specific date and many of them could date from anywhere between the middle Neolithic to the middle Bronze Age. One of the platform cores from Pit [083] shows later use from the same platforms, the stark contrast between condi-

tions of the removals indicating a substantial period of time between the two phases of reduction.

There are also a few core curation flakes from the quarrying features and the surface scatter recovered during evaluation trenching of the site. These include platform trimming flakes (e.g. Cat.16, Figure 8c) and some thick overshoot flakes (e.g. Cat.268, Figure 8d). These are not high in number. Their presence confirms core curation on site, the low number also supports the evidence that the site was mainly for testing and basic preparation.

Phases 2–4: Late Bronze Age to Early Iron Age Activity (1000BC – 300BC)

An isolated multi-use pit

Within Area B (Figure 4), in the central east of the site, a pit (G1) was recorded measuring 5.80m x 2.85m in plan and 0.49m deep. This isolated feature was on a NNW–SSE alignment and was backfilled by dark brown/grey loam clay; the result of one event (incorporating topsoil) as opposed to a silting up over time.

Small sherds of late Bronze Age to early Iron Age pot (Franklin *et al.* 2011) were recovered from the back-fill along with a small quantity of charred cereal grain including naked barley and hulled barley, together

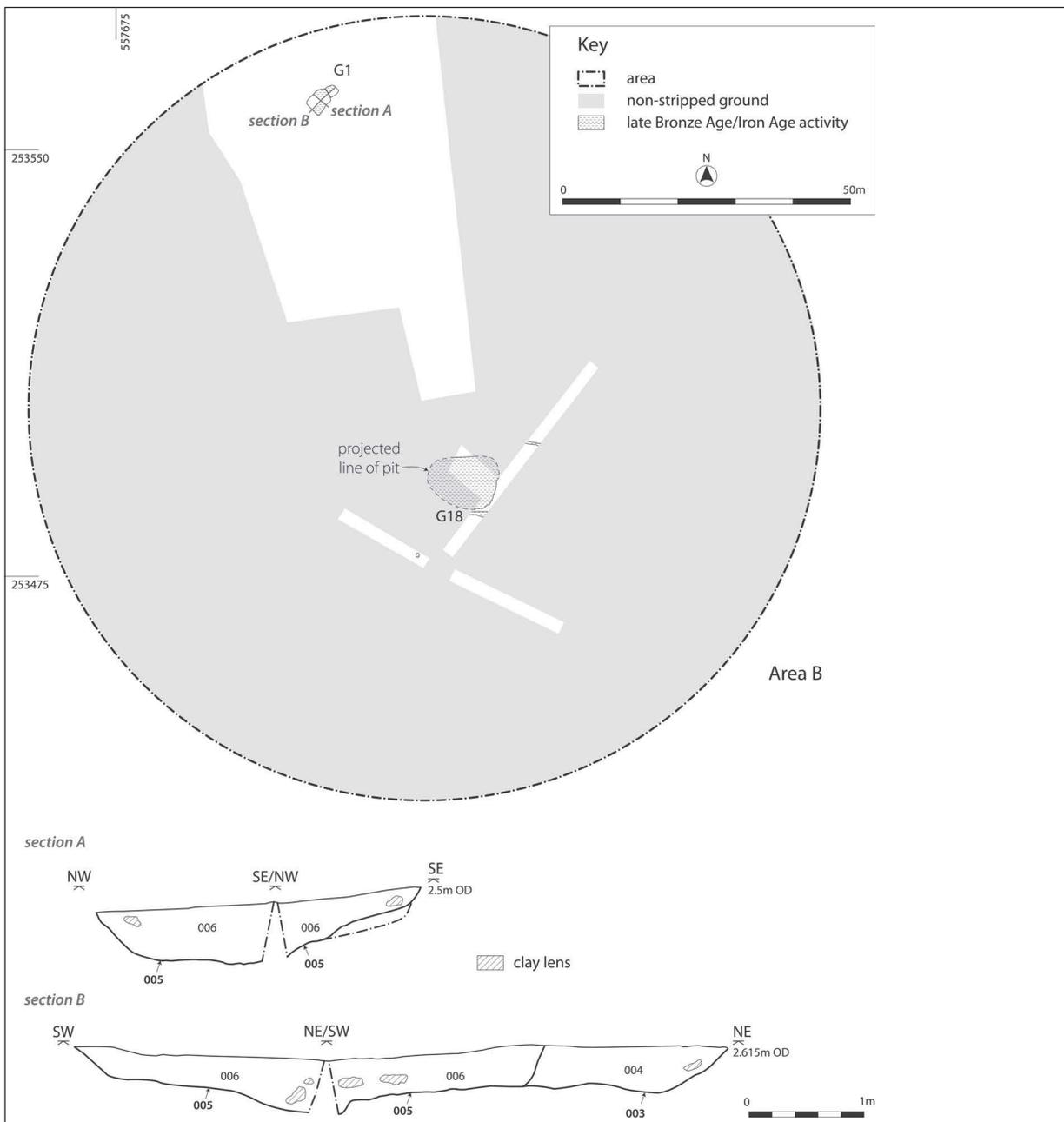


Figure 4. Late Bronze Age/Iron Age activity at Area B.

with indeterminate cereal grain; the presence of barley is indicative of a late Bronze Age date (Franklin *et al.* 2011). Other materials recovered from the pit included lithics and daub, as well as unburnt bone and marine shell (Franklin *et al.* 2011); suggesting the discard of food and domestic waste into the pit.

Pits, ditches and gullies

In the south of the site, in Area D (Figure 3), a concentration of shallow postholes and pits were recorded (G24). The pits, on average, measured 0.75m long and 0.60m wide, with a depth of 0.15m. Their backfill consisted of mid brown sand clay and contained fragments of late Bronze Age to early Iron Age pottery and burnt clay with charcoal. As little ceramic evidence was recovered from the site as a whole, and charcoal as a rule was rare, the presence of both materials in the pits are of note. Postholes discovered around the pits did not appear to form a specific structure although the features had been plough-truncated, reducing their original depth and possibly resulting in the loss of some related postholes. It could be that they would have supported some form of temporary shelter or formed part of a structure along with the pits.

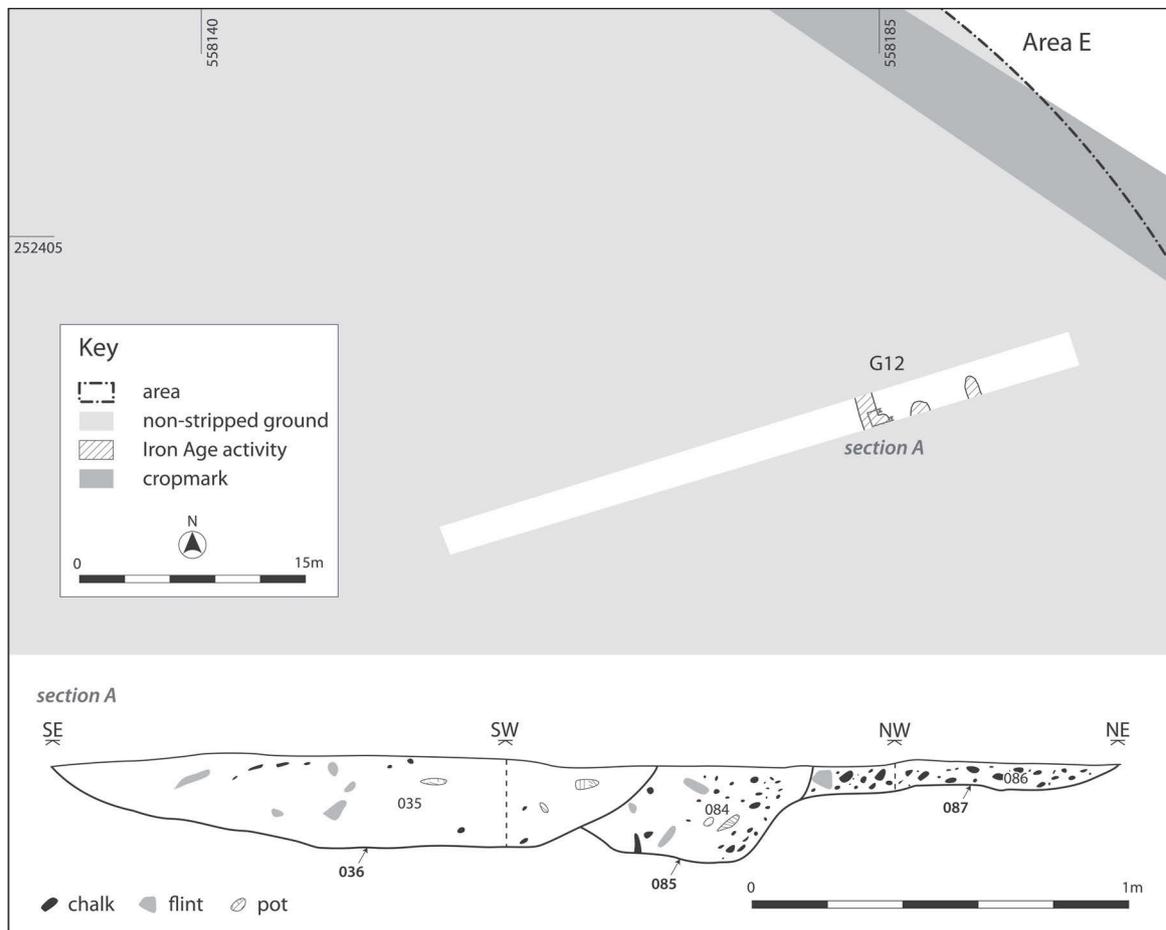
To the east of the postholes and pits, a ditch was

aligned NNE–SSW with a depth of up to 1m. A high concentration of flint pieces typical of the Neolithic period were recovered from the backfill deposit; a homogenous, sterile deposit through gradual silting. The flint assemblage included several blades and two scrapers. Several pieces of pottery datable to the Iron Age were also recovered. The Neolithic flints in the later contexts of the ditch suggests they are residual and given the quantity of Neolithic flint finds on the site, this is to be expected within many later deposits. The physical closeness of the ditch to the late Bronze Age/early Iron Age posthole and pit features, along with the recovery of pottery of a similar date would suggest they are related and form part of a contemporary landscape.

To the south of G24, a series of curvilinear features formed a sub-oval shape gully (G23) which was very shallow with a maximum depth of 0.13m. The features were backfilled by silty clay deposits with the only finds recovered being lithics, some of which showed signs of retouching and which included refitting pieces. Together, the features had the appearance of a drip gully or wear hollow and were considered broadly contemporary with G24.

Five other pits were scattered over the nearby landscape between G23 and G24. They were filled

Figure 5. Investigation at Area E.



by a homogenous silty clay and produced no datable material. A sixth pit contained a sheep burial. Whilst there is no evidence to suggest a use or solid date for these features, their location and characteristics could suggest they are contemporary.

Study area D contained further evidence of a long lived landscape with ditch and pit features (G14, Figure 3). Ditches aligned NE–SW and NW–SE (similar to that in G24 but shallower, at a depth of 0.24m), along with small pits, are representative of settlement in the area. The pits contained flint-tempered pottery dating to the early Iron Age along with some animal bone and are most likely representative of pits for food waste.

Further evidence for settlement (G12) was recorded at the most south-easterly Area E. A ditch [087] running N–S was revealed (Figure 5) with a shallow depth (0.09m) and gently sloping sides. It was filled with mid brown sandy silt. Cut into the centre of this feature was a small pit [085], 0.7m wide and 0.24m deep. It was filled with dark brown silty clay and contained burnt fragmented pottery. Charred club/bread wheat was also present. This pit appeared to have been cut by a wide shallow pit [036] 1.2m wide and 0.24m deep, although the relationship was not clear. Interpretation of the ditch and pit features (G12) was limited as they were investigated only within the confines of an evaluation trench and subsequently preserved *in situ*. However, the abundance of pottery and burnt plant remains contained within them are consistent with settlement activity, of which they are thought to represent a small part.

Field systems

A number of ditch features were recorded across the site on various alignments, many forming T-Shapes, and were typical of Iron Age linear boundaries used to separate land into fields (Oosthuizen, 2006, 12). A small amount of pottery recovered from certain ditches dated to the early Iron Age and whilst there was no solid dating evidence from the majority of the ditches, they were presumed to be part of the same long lived field systems across the site. The paucity of datable artefacts is typical of field boundaries of this period. They are located away from settlement areas where datable artefacts become more commonly incorporated into cut features due to casual discard. In contrast, field boundaries gain artefactual material less often, in smaller quantities and an abraded state; generally as a result of manuring and subsequent ploughing.

Further ditch features were recorded within Area B (Figure 4) along with a large pit (G18) measuring 9.50m x 7.50m x 0.60m. The pit may have been a cistern for collecting rain water for cattle and suggests that the ditches were potential animal enclosures. Although these features had no solid dating evidence they are presumably a further example of field systems.

Pottery

The prehistoric pottery was spread between a num-

ber of pits and ditches, generally found in the final (disuse) fills of these features. These included features associated with Phase 2 activity (Groups 1, 24), the Phase 3 settlement (Groups 12, 14) and the Phase 4 field system (Groups 3, 16, 18), as well as a number of sherds found redeposited within the Saxon sunken-floored building (Group 2).

The similarity of the prehistoric pottery fabrics between these different areas suggests they are broadly contemporary but little of the pottery assemblage can provide good dating evidence. The pottery from the Group 12 pits (Phase 3) provide the only sizeable Group assemblage and the best of the dating evidence. On the basis of the diagnostic carinated forms from the final fills of the Group 12 pits (Contexts 035 and 084) consisting of at least five carinated jars, with diagnostic sherds from Contexts 035 and 084 one of which, (that from 084 – Figure 9), appears to have been burnt and reoxidised over the break) the pottery dates to the late Bronze Age or earlier Iron Age although close dating of pottery of this period is notoriously difficult (Knight 2002) and there are few diagnostic forms amongst this fragmentary group.

Other phases may be of similar dates, certainly there were no diagnostic features pointing to other periods, but the pottery cannot point towards any temporal progression or indicate the longevity of the activity there.

The pottery present is predominantly flint and quartz gritted with 17 sherds showing signs of sparse calcareous inclusions, which may be from the parent clay. Nine sherds of grog tempered pottery are also present. Flint is present in the majority of sherds in this assemblage. Some sherds also contain fossil shell. It is likely that the majority of the pottery was locally made (Webley 2005, 39) as pottery of this period in the region is commonly flint tempered (Glazebrook 1997, 22; Webley 2005) and fossil shell temper is also known amongst contemporary groups from elsewhere (Allen 2009; Jackson 2003).

The pottery firing colours range from completely 'black' or reduced and many vessels have an irregular patchy firing colour ranging from dark grey to a dark red.

The forms present in the Group 12 assemblage fit with those from Wandlebury (Webley 2005, Hill 2004). The carinated vessels are similar to Hill's 'Tripartite Jar' (2004, figure 21, Type 8). The jars are also typical of other contemporary groups from the region including the flint gritted pottery from nearby excavations at Balsham (Ashworth and Kaye 2008 10–11, plates 4–8) and Iron Age 'A' pottery recorded from earlier field collections in the same parish (National Monuments Record (NMR) 374485). It appears likely that the rest of the assemblage is also contemporary with the finds from Group 12 although the fragmentary condition of many of the sherds makes this uncertain. A broader date range might be represented than the forms found in the Group 12 pits suggest.

A single abraded sherd from the final fill of the Group 3 ditch (Phase 4, Context 008) in an oxidised light firing sandy fabric, may conceivably date to the

early Roman or medieval periods. It is potentially intrusive.

Charred plant remains, charcoal and bone

The majority of the charred grain recovered from the site was from the upper fill (006) of late Bronze Age to early Iron Age pit [002] (Group 1) where small quantities of probable naked barley and emmer wheat were recovered together with barley sp. and indeterminate grain. A small quantity of cereal grain was also recovered from the fill (084) of pit [085] (Group 24) from this period. Charred grain of probable club/bread wheat and indeterminate grain was recovered from the pit (Table 2). Although only small, the assemblage of grain from these features does offer some evidence for cereal cultivation in the area. The presence of probable naked barley is of interest as hulled barley varieties are usually associated with this period (Hillman, 1984) and its presence within the assemblage may be as a relict crop or arable weed rather than an intentional cultivar. The presence of probable emmer wheat in the assemblage indicates the cultivation of wheat crops in the area. Charred grains of wheat have been found from similarly dated sites in the east of England (e.g. Fryer, 2005). Together with charred grain pit [002] also contained pottery sherds suggesting the pits were used for the deliberate discard of domestic waste.

The charcoal assemblage from pit [085] was dominated by oak with one fragment of blackthorn also recovered. The assemblage indicates that dryland woodland was resourced for fuel wood, with the presence of blackthorn, a shade-sensitive tree suggesting open canopied woodland existed, or collection from woodland margins (Orme and Coles,

1985). Pollen diagrams from the east of England show that oak woodland was still in existence during this period, however, oak pollen is seen to decline in diagrams at the same time as it rises in the microscopic charcoal curve (e.g. Bennett *et al.*, 1990). This suggests the clearance of oak trees during the late Bronze Age/early Iron Age, which may also be linked to its use as a major fuel wood during this period.

Ring curvature of the charcoal fragments shows that branchwood was the main timber used for fuel and the dominance (albeit in a limited assemblage) of this timber size suggests deliberate selection of this sized timber. This dominance of branch wood indicates collection of wood fuel using methods such as pollarding (Rackham, 2003). Oak was a choice fuel in the Bronze and Iron Age's (Kelley, 2002) due to its high burning temperatures and thus excellent fuel qualities (O'Donnell, 2007). The presence of fungal hyphae on one of the timbers suggests it was beginning to rot prior to burning (Schweingruber 1978 and 1990; Marguerie and Hunot, 2007). This suggests stored fuel wood may have been exposed to the elements thus becoming wet and prone to fungal attack or that dead wood, from the woodland floor was also opportunistically used for fuel.

The animal bone assemblage dating to the late Bronze Age – early Iron Age and the Iron Age contained highly fragmented and un-diagnostic burnt and unburned bone. The size and condition of the assemblage makes it of no interpretative value.

Phase 5: Anglo-Saxon activity

Area C (Figure 10), in the central south of the site, revealed an Anglo-Saxon sunken featured build-

Table 2. Charred cereal grain.

			Late Bronze Age to Early Iron Age G1 and G24		Anglo-Saxon G2
			Upper fill of pit [002]	Fill of pit [085]	Fill of sunken building
	Context No.		6	84	19
	Sample No.		2	7	6
	Original vol (litres)		40	10	3
	% of sample analyzed		100	100	100
Cereals	Plant Part	Common Name			
<i>Hordeum</i> sp.	caryopsis	barley sp.	1	-	-
<i>Hordeum</i> cf. <i>H. vulgare</i>	caryopsis	probable hulled barley	-	-	1
<i>Hordeum</i> cf. <i>H. vulgare</i> var <i>nudum</i>	caryopsis	probable naked barley	1	-	-
<i>Triticum</i> cf. <i>T. aestivo-compactum</i>	caryopsis	probable club/bread wheat	-	1	-
<i>Triticum</i> cf. <i>T. dicoccum</i>	caryopsis	probable emmer wheat	2	-	-
Cereal: indeterminate	caryopsis	cereal indet.	2	1	-
	Wild taxa (%)		0	0	0
	Cereals (%)		100	100	100
	Wheat (%)		33	50	0
	Barley (%)		33	0	100
	Indet (%)		33	50	0
	Total cereal grains per litre		0.15	0.2	0.33

ing (SFB) which was aligned NE–SW and measured 3.24m x 2.40m in plan. Two post holes, both with a diameter of 0.35m, were associated with the SFB with one located on either end of the long axis of the feature (a typical feature of an SFB (Tipper, 2004, 1)).

Discovered within the fill of the SFB were loom weights. The largest group of weights were found in a single row about 85cm long, made up of approximately 18 weights, running close to and parallel to the long southern wall of the building. A group in the south-west corner may represent part of this line, disturbed by later activity, or may represent a separate dump of material, possibly some of both. Two further groups in the north-west and north-east corners probably represent separate dumps of weights (Figure 10).

Ceramic loomweights

The weights were contained in the uppermost (final) deposit [016] which consisted of light yellow brown silty sand and had a fairly shallow depth of 0.20m (Context 016, Group 2) (Figures 11a to 11c). Many of them were found in a single line along one wall of the building. The weights were in varying condition. Some were complete but for a little surface spalling, which probably happened during manufacture or use, or in a few cases surface damage incurred during excavation. The distribution of the weights was planned before excavation. Some were extremely fragmentary due to the crumbling and soft-fired

nature of the ceramic. Each weight was given its own small find number, and recorded by number of sherds (pieces spanning whole ring thickness), number of fragments (smaller pieces), weight, percentage of complete find present, diameter, ring thickness, hole diameter.

The loomweight assemblage amounted to 79 large sherds, and a further 498 fragments, weighing a total of 12.742kg. These represented between 32 and 45 individual finds. The minimum number is based on the total weight of the assemblage divided by the average weight of a complete example, the maximum number, by the number of individual finds recovered from the site, after attempts were made to join together any smaller sherds from less complete examples.

The fabric is coarse and soft-fired. The clay typically fires to a pale yellowish buff, though the core is often a reduced grey. Angular stone inclusions are present up to 10mm across. The surface is typically rough, with finger marks sometimes visible in the surface. Spalling on the surface seems to have largely occurred during firing, as there is no difference in surface colouration, though it is possible that some damage also occurred during use. Each one appears to have been made from a roundel of clay with a central hole pushed through. A small ridge of clay around the central hole sometimes survives, though has more frequently been smoothed away into a doughnut shape. Sometimes finger marks on the interior of the hole show that this has been enlarged,

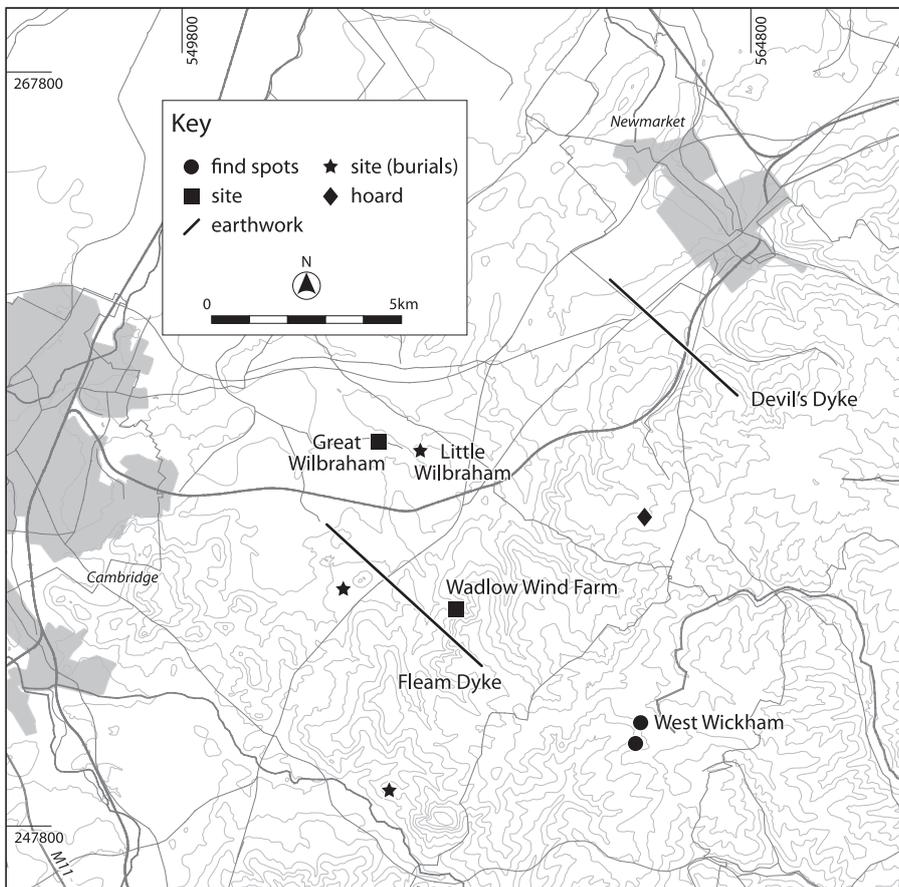


Figure 6. Some Anglo-Saxon activity around Wadlow Farm cited in the text.

sometimes from both sides, sometimes predominantly from one, with a hole becoming distinctly wider on one side than the other. None display any impressed marks or decoration as can sometimes be found (e.g. Rogers 2009, 288–296).

Statistics on size and shape for the assemblage are shown in Table 3. The data for diameters is taken only from examples where this could be measured (26 examples), rather than estimated on a diameter chart. The weights are based on the estimated complete weights only of finds which were 90% or more complete (17 examples), keeping error margins to a minimum.

Table 3. Loomweight statistics

	Minimum	Maximum	Average
Complete Weight (g)	312	463	397
Diameter (mm)	98	127	113
Hole Diameter (mm)	33	45	39
Ring Thickness (mm)	31	48	37
Hole Diameter/Ring Thickness	0.76	1.39	1.03

The typology of loomweights rests on the ratio of the diameter of the hole to the thickness of the ring. Early ‘annular’ weights have holes wider than the ring thickness, while later ‘bun-shaped’ weights have holes smaller than the thickness. In this assemblage the two are largely equal and thus they can be classed as ‘intermediate’ (Hurst 1959; Hedges 1980; Rogers 2007, 30).

In terms of weight they fall within the mid range of Saxon weights of 100 to 1460g (Hedges 1980; Hamerow 1993, 66–7; Rogers 1997, 1753) and thus would seem to have been involved in the production of ordinary types of cloth. No wear marks were found from where attached threads have rubbed against the clay. Possibly they were not in use for long.

Pottery

Sixteen sherds from eight different vessels of Anglo-Saxon date were found in, or in the vicinity of the Group 2 SFB. The pottery is in an abraded to fairly fresh condition. Sherd size entirely falls into the small to medium size range (between 1 and 20 grams). Two different pottery ware types were noted: Anglo-Saxon Erratic-Tempered (ERRA, 13 sherds, five vessels) and early to mid Saxon Sandstone-Tempered (SST, three sherds, three vessels). Three vessels are represented by more than one sherd but few vessel forms were identifiable.

The three sandstone tempered vessels included a probable jar along with other pieces from probable jars and bowls. The first of these was unstratified, an abraded sherd, probably from a jar and with a mixed fabric with sparse to moderate medium-sized aggregated quartz grains. A rim top from a small

jar or bowl was recovered from the final fill of the SFB (Context 016, Group 2, Phase 5). This vessel is in a coarse sandstone-tempered fabric that also contains carbonised vegetable matter, sparse calcareous grains and a few fragments of grog. The other sherd was recovered from the final fill of a post-hole associated with the SFB (Context 023, Group 2, Phase 5) and is from either a jar or bowl. The fabric of this vessel mainly consists of fine quartz with moderate aggregated grains, but a few fragments of grog are present.

The sherds of the other five vessels were all found in the final fill of the SFB. These are in a very mixed fabric that has a fine quartz background with a variety of other inclusions in variable quantities. Amongst these inclusions are fragments of biotite granite, coarse angular quartz grains, flint and feldspars. Three sherds, probably from a single jar have an external burnished surface and the neck of another jar is slightly polished, otherwise the vessels are undecorated. Seven of the sherds are from a single vessel; a small necked-jar with a baggy profile and a simple rounded rim that has been slightly flattened on top. The vessel has external sooting and a partial internal carbonised deposit. The remaining sherds could come from jars or bowls.

A number of sites in the area have produced sherds of Anglo-Saxon type; however few reports contain detailed fabric descriptions with which to closely compare the group from this site. The fabric types found are typical of other ceramic assemblages from this part of Cambridgeshire seen by the writer (Woodley) and those described by Blinkhorn (forthcoming; 2008) and at the Criminology site in Cambridge (Dodwell, Lucy and Tipper 2004).

A settlement site of proposed 6th to 7th century date was revealed at the Criminology site at Cambridge (Dodwell, Lucy & Tipper 2004). An assemblage of 65 sherds of handmade early Anglo-Saxon pottery was recovered including organic-tempered sherds (c. 35%), sandstone-tempered sherd (c. 24%), erratic-tempered sherds (c. 23%), calcareous-tempered sherds (c. 15%) along with other pieces (c. 3%). The mixed nature of the sandstone and erratic-tempered fabrics accords well with the pottery from this site, however the most common fabric to be recovered there (organic-tempered) is entirely absent from the Wadlow group. Organic-tempered sherds are in use in the area throughout the Anglo-Saxon period but are most common in groups post-dating the late 6th century (Hamerow *et al.* 1994, 14–15). By the 8th century the area is receiving Ipswich and Maxey-type ware but still continues to use some handmade types (P Blinkhorn pers. comm.).

The small size of the assemblage and lack of chronologically diagnostic features within the small group from Wadlow prohibits close dating. Similarities with other Saxon pottery in the area suggest that the material is most likely to have come from a domestic assemblage of early Anglo-Saxon 5th to 7th century date. As almost all the finds were associated with the final fill of the sunken-floored building it seems like-

ly that the structure was abandoned between these dates.

Interestingly, the sunken featured building was discovered in isolation with no other remains dating to Anglo-Saxon period in the vicinity.

Charred plant remains and bone

A single grain of probable hulled barley was recovered from fill (019) (Group 2) of the SFB (Table 2). This grain, together with small quantities of small-sized charcoal fragments (<0.5cm) was the only Charred Plant Remains (CPR) recovered from the building. This could represent intrusive material as much as *in situ* material. Hulled barley within the Anglo-Saxon period would not be out of place as a cultivar (c.f. Murphy, 1994; Hall, 2003).

The animal bone assemblage dating from the Anglo-Saxon contexts is very small (100g) and in a fair/poor condition. However, it was possible to identify one bird and large and medium size mammals.

Discussion

Neolithic quarrying

The Neolithic remains at Wadlow represented a relatively unusual opportunity to investigate a flint-working site. Many of the known sites "*comprise monuments, usually of a funerary and/or ceremonial nature, where the form of the site (ditches, mounds, banks) is of a kind that leaves visible traces, and the outline is characteristic of a particular class of Neolithic site. However, the substantial proportion of the archaeological record which is not readily identifiable from aerial photographs – flint working sites, agriculture, unenclosed settlement or pit groups – is under-represented. . . More work is needed to reduce or compensate for this bias*" (Medlycott 2011, 14). Therefore, we have taken the opportunity to consider the evidence for Neolithic land-use at the site.

The site is located on a geological deposit rich in flint nodules. The concentration of quarry pits in the north of the site (in the south-western part of Area A) confirmed the presence of a flint rich landscape as they identified a clear seam of flint visible in the lower part of the quarry pits. Garrow (2007, 9) has written about the placement of pits in the Neolithic. In this case, the location of the pits at a relatively high point, with a panoramic view over the landscape would appear to be a good choice, not only for the raw material available, but for a prominent and perhaps 'special' site to be located.

At Kilverstone in Norfolk (where extensive spreads of Neolithic pits were recorded), the excavation of pits and burial of material within them played an important role in 'marking' the landscape both physically and metaphorically (Garrow, Lucy & Gibson 2006, 81). Similarly, at Wadlow, it is likely that the pits held some significance for the nearby community and the site would have been returned to on a seasonal or

yearly basis.

Possible pick marks were identified at the base of pit [082] (Group 21) which provides an indication of possible quarrying technique and may also signify attempts to quarry deeper. A small quarry pit at Churchill, (Russell 2001, figure 67, 113) had similar pick marks, some were also noted at Blackpatch, (Russell 2001, 40) and on chalk boulders at Tolmere, (Russell 2001, 163). As antlers have been found at so many mining/quarrying sites (Russell 2001) it would seem they were the popular tool used to quarry out the flint. There is an absence of any evidence of domestic activity in the area surrounding the quarry pits, and so it is likely that the people utilising the resource did not need to camp at the site, but travelled back to their settlement after the extraction had taken place. Most of the flint material recovered from the site relates to the first stages in the sequence of reduction. It is likely the site was mainly for quarrying, testing and basic preparation of the flint; supplying partially prepared cores of a quality and size suitable for most purposes.

One of the largest (and most famous) examples of flint quarrying in Britain is seen at the site of Grimes Graves in Norfolk where shafts up to 12m deep were dug into the chalk to mine flint by exploiting the flint seam (English Heritage 2011). The flint quarrying observed at Wadlow was on a much shallower scale but revealed the same techniques seen at Grimes Graves; undercutting of the pit walls from below the surface of the chalk. This method of 'chasing' the flint seam from the pit wall is a feature common to most mining operations, whether in small pits or the 'galleries' of deep mines.

It does not follow that shallow quarrying displays a lack of technological ability or lack of quality in the resource, some deep mines have been shown to have been cut through shallow open cast quarries (Russell 2001, 2007).

Two pits excavated within Area A were interpreted positively as quarry pits, other nearby pits are highly likely to share this function supporting the idea of a prominent Neolithic quarrying site. Analysis of the feature tree bowl (Figure 2) strongly suggests comparable activity and date to the quarry pits; mainly due to the similarities in the flint it contained. A similar situation was noted at Heathfields (White 1997, 22) where a tree throw or hollow had been quarried, presumably, because it was an easily exploitable location. Bishop (2007, 27) references the unpublished site at Fordham (Mortimer and Connor, forthcoming) where, during the early Neolithic, an apparent solution hollow was used for the procurement and reduction of products which were then removed and taken elsewhere to be worked into tools. The small size of the pits and high levels of surface flint noted on site strongly point towards material being tested within the pits then removed for further preparation. To reduce the nodules with potential in the small quarry pit would have led to it quickly filling with a multitude of chunks, flakes and shatter which may have inhibited further quarrying. It is more likely that pieces

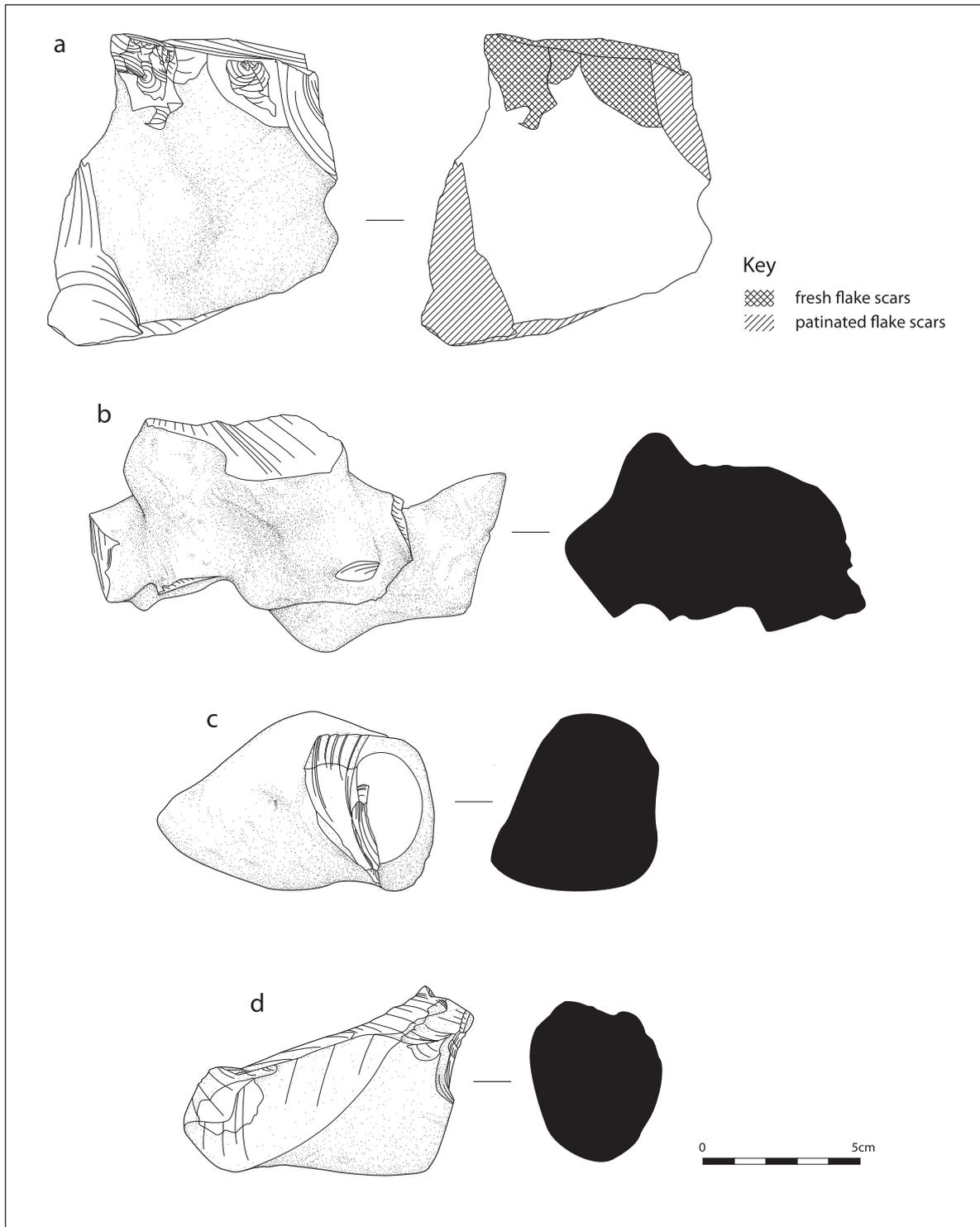


Figure 7. a) Cat 577 patinated piece with retouch, b) Cat 553 split cobble, c) Cat 326 minimally worked core, d) Cat 423 minimally worked core.

were tested and then those with potential removed. The surface flint collected from the topsoil of Trench 5 is most likely from knapping floors around the surface of the pits

Throughout the flint assemblage recovered from Wadlow, there are examples of pieces with retouch of

fresh condition. As most of the material in the quarry pit was sealed it seems that the likely explanation is 'grubbing' amongst the upper silty deposits of the quarry pits or surface scatters and dumps. Some of the tool types and the clear length of time between removals indicate the likelihood that there was a

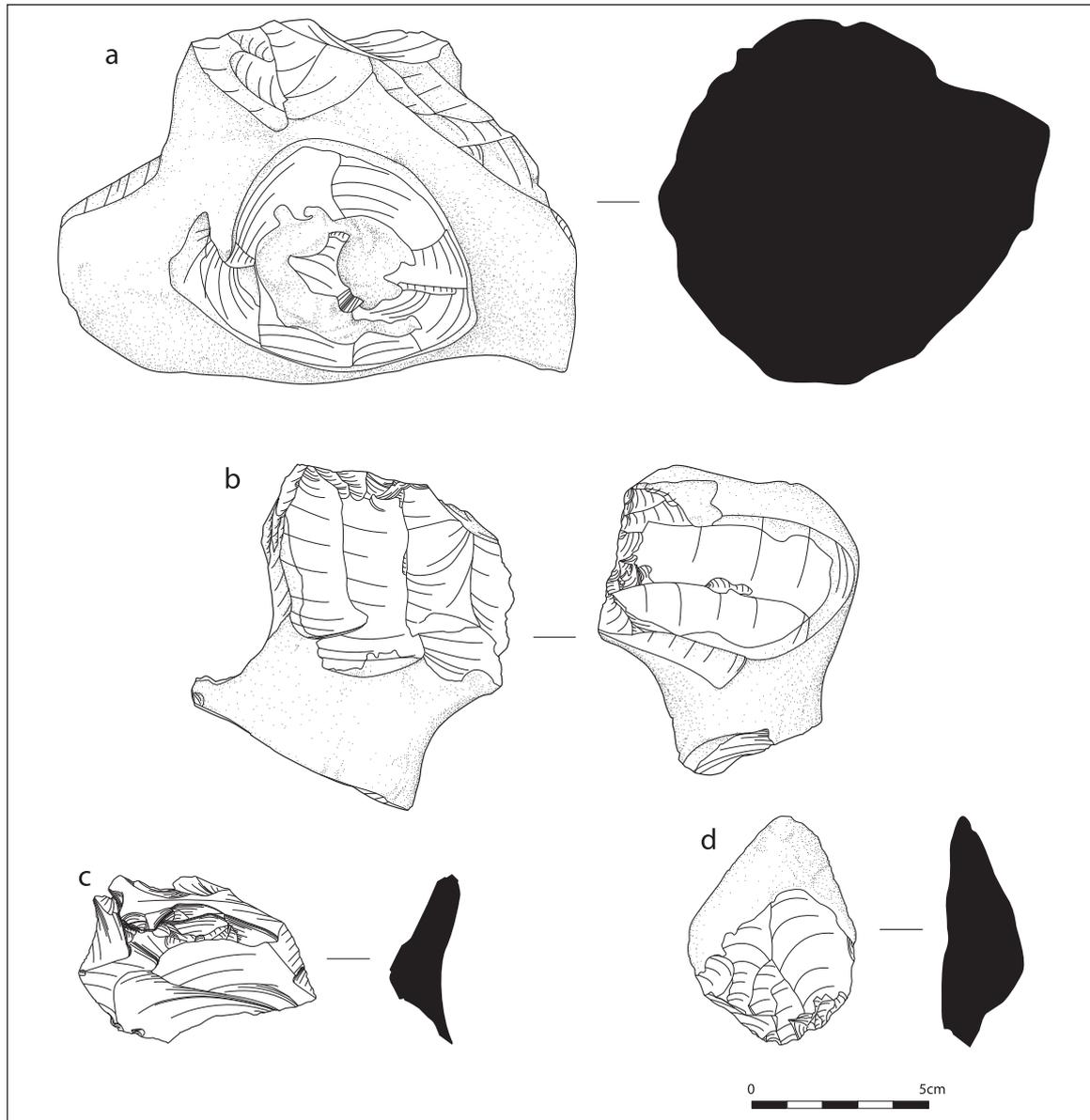


Figure 8. a) Cat 574 minimally worked core, b) Cat 323 core used for blade production, c) Cat 16 platform trimming flake, d) Cat 268 overshot flake.

phase of Bronze Age quarrying activity. Leivers mention a precedent for such activity in the later Neolithic and early Bronze Age for the Sussex mines (Leivers 2004). Some of the tool types and the retouch identified in the Wadlow assemblage are of a Bronze Age date. The material recovered from some of the pits in G22 showed flake scars which indicate re-use. In addition four pits ([004], [014], [019] and [027] recorded at the east of the mitigation area produced flint with a fresh patination indicating later re-use. Accordingly, this supports the suggestion that the site was revisited in the Bronze Age. This all points towards the site being revisited in the Bronze Age, with surface material and other easily accessed pieces being re-used. It is not clear, however, how many times and at what intervals the site was revisited and exploit-

ed. Therefore, though the majority of the quarrying activity lies in the Neolithic period, it is likely that this site would have been utilised for a long period of time, continuing into the early Bronze Age.

Late Bronze Age/Early Iron Age landscape

Through combining the results of the investigation at Wadlow with a previous aerial photographic assessment (Palmer 2009), it is possible for us to visualise a landscape which, within the late Bronze Age/early Iron Age, begins to be utilised for farming, with ditch systems beginning to appear along with the associated digging of pits.

In Area B, the large pit and related ditches of G18 form part of a large complex of related remains. These

are visible as a series of cropmarks and shapes indicative of deeper soils in the area surrounding them (Figure 12). The cropmarks are indicative of a series of potential animal enclosures, whilst the deeper soil to the NW of these may be the result of (livestock) trampled ground and/or wallows (pigs). By connecting sections of recorded ditches with cropmarks and current field boundaries, a fuller picture of the landscape starts to emerge. This includes field systems, livestock enclosures, and even potential funnelled entrances which would have aided in cattle or sheep being guided between fields (Figures 3 and 12).

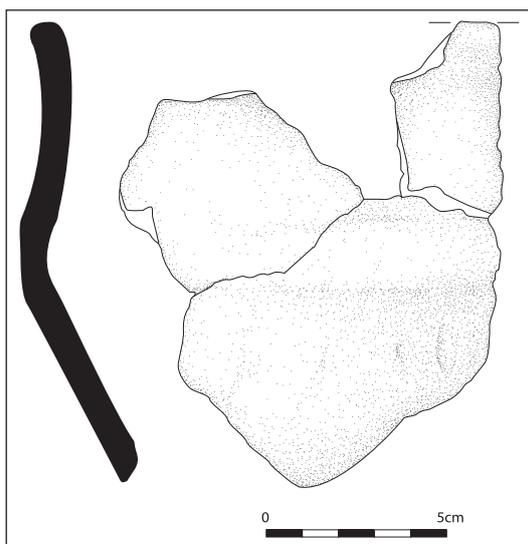


Figure 9. Sherds from carinated jar (late Bronze Age/early Iron Age).

Similarly to Area B, Area D revealed large sections of boundary ditches (G14) as well as associated post holes, pits and gullies (G23 and G24) (Figure 3). Flint and pottery recovered from the discard fills of these features place their use within the late Bronze or early Iron Age. The placement of the gullies G23 and pits/post holes G24 within (what is presumably a field system) G14 would suggest that they formed part of either small scale settlement, or more plausibly, temporary shelters associated with the working of the land. Their presence is an indication that this relatively high ground may have been the focus for activity; perhaps exploited for its commanding views over the surrounding landscape.

Charcoal retrieved from pits G24 and G1 offers evidence for the cultivation of cereal, demonstrating that land was being used to grow crops from as early as the Bronze Age. Together with charred grain and the pottery from the pits, it suggests that whatever the initial purpose of the pits may have been, they were ultimately used for the deliberate discard of domestic waste.

The majority of the ditches excavated at Wadlow produced little in the way of artefactual or ecofactual material. As a whole, ditch boundaries tend to lack

dating evidence and it may be reasonable to conclude that such boundaries (along with the pits, gullies and cropmark evidence) were part of a large-scale division of land that was probably initiated during the late Bronze or early Iron Age (Deegan, 2007, 89).

An Anglo-Saxon sunken featured building

Throughout the investigation, little physical evidence was revealed which would increase knowledge of how the land at Wadlow was used beyond the Iron Age up until its current use as arable, agricultural land. However, a significant example of how at least part of the land was utilised during the Anglo-Saxon period was uncovered in the western part of the site.

The Sunken Featured Building (SFB), or *Grubenhäuser*, is a distinctive building type that occurred in England and across north-west Europe from the fifth to late seventh centuries AD and is one of the defining features of early Anglo-Saxon settlements (Tipper, 2004, ix). They are typically sub-rectangular in shape often with two post holes along the shorter walls of the pit, which matches SFB G2 (Area C, Figure 10). Typically these structures do not have hearths, as is true at Wadlow.

Textile production has been the function most frequently attributed to SFBs, mainly due to the number of artefacts associated with this activity found within them and their arrangement on the base of the pit (Tipper, 2004, 64). At Mucking, for example, more than two loomweights were recovered from 21 of the 203 *Grubenhäuser* excavated (Hamerow 1993, 17–18). The evidence recovered from the Wadlow SFB continues this pattern with c. 45 individual ceramic weights from a warp-weighted loom found within the upper deposit (disuse) of the SFB.

Warp-weighted looms were in use in Britain from at least as early as the Iron Age, continuing as late as the 12th century AD, when the introduction of the horizontal loom made them obsolete (Rogers 1997: 1753; Hurst 1959:25). Clay loomweights are common finds on Anglo-Saxon sites, sometimes fired, sometimes in unfired clay (Rogers 2009, 288). Intermediate loomweights are known from as early as the 6th century, and are well established by the 7th century, continuing through the Middle Saxon period and later (Rogers 2007, 30; Rogers 2009, 288). The pottery associated with these weights is most likely to date to between the 5th and 7th century, possibly a little later. The finds must therefore date to between the 6th and 8th centuries, but are most likely to belong to the 7th century. This provides the best dating evidence for the abandonment of the building, though it is not clear for how long it was occupied before this.

The loomweights seem to have been left where they lay when the structure was abandoned, suggesting this building was used as a weaving shed. Weaving sheds do not generally exist in isolation and it is likely that this structure formed part of a larger settlement complex, as yet undiscovered. No other textile related finds, such as spindle whorls or pin beaters were recovered.

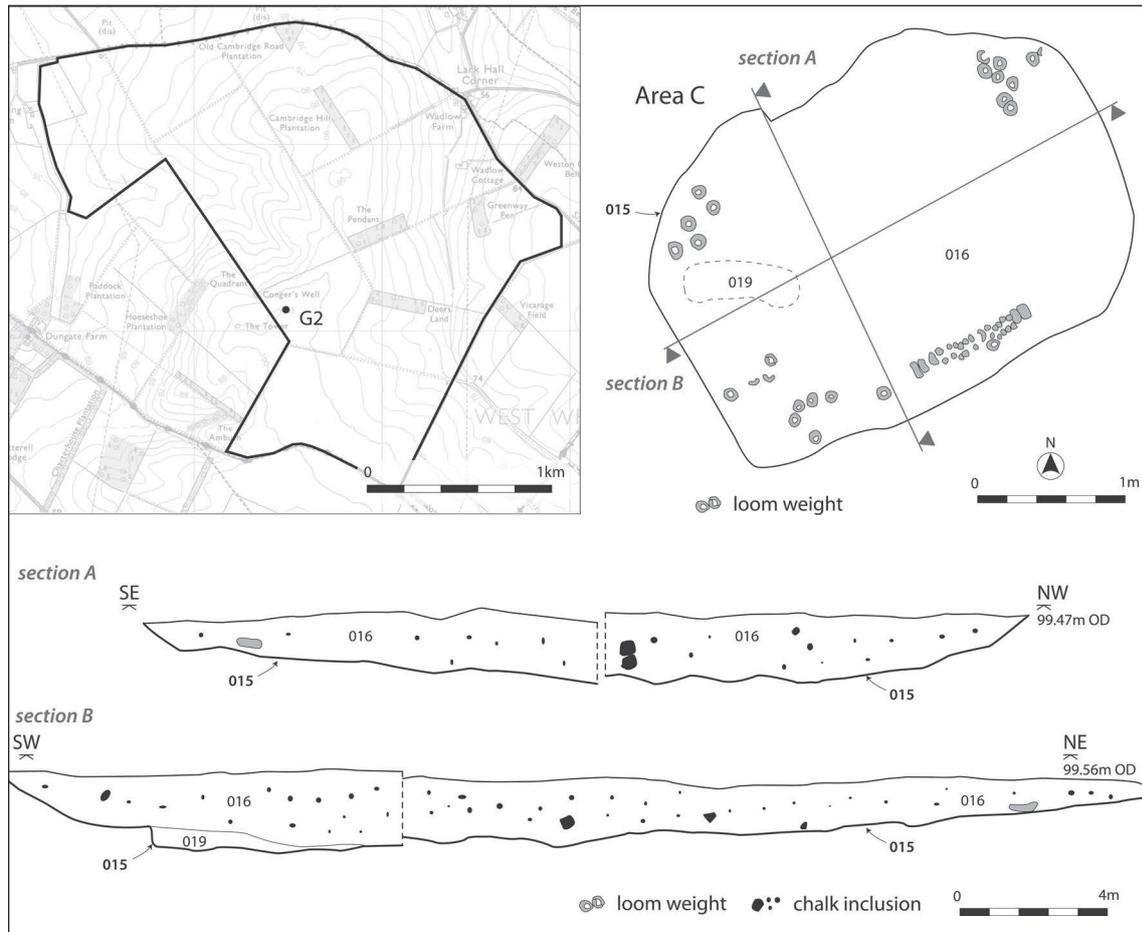


Figure 10. Anglo-Saxon Sunken Featured Building at Area C.

Comparison with other sites suggests the loom would have been of some value. When disassembled it would be easy to transport and thus it is unlikely that the loom would have been left to decay in an abandoned building. Evidence from Upton, Northamptonshire (Jackson *et al.* 1970, 210) suggests that weights, when not in use, were stored on wooden poles, possibly on racks (Hamerow 1993, 17; Rogers 2007, 32), near to where they were used. The arrangement of the weights against the south wall in a short closely spaced row (Figure 10) indicates that these were such a set, left in the building when it was abandoned. The outlying groups in the corners of the buildings probably represent dumps of broken weights that may have been discarded over the life of the building.

Although the SFB was a solitary discovery, and the site as a whole was devoid of any other features dating to the Anglo-Saxon period, its placement within the landscape in such close proximity to the Fleam Dyke (1km) is of particular note (Figure 6).

It can be postulated that any type of settlement that was situated between the Fleam Dyke and Devil's Dyke would have been well defended. Both dykes are thought to have marked boundaries or defensive barriers which would have likely been used in con-

junction with each other during the Anglo-Saxon period. The Anglo-Saxon Chronicle records the names of several small tribes which lived in the fens and in the region around Cambridge, suggesting that the area was not part of the major kingdoms. Instead, it was a frontier zone, and a buffer for the kingdom of East Anglia. Perhaps because of this, settlement evidence is less common than that from burials (Malim, 2003, 32). There are few known settlements located directly along the Dykes; some villages located along the routes may have origins in the Anglo-Saxon period but relatively little is known of these as the villages are still occupied today, sealing archaeological remains (Williamson, 2010, 30).

It is commonly accepted that early and middle Anglo-Saxon settlement was predominantly dispersed, taking the form of hamlets or farmsteads which shifted periodically within the territories in which they lay, as opposed to 'nucleated' settlement which was concentrated in just one place in a township (Oosthuizen, 2006, 145 & 2010, 107). Settlement was less widely dispersed across the landscape in this period and sites were restricted to areas of freely draining chalk, sand or gravel (Williamson, 2010, 30) like that of West Wrattling.

The change from a dispersed to a nucleated pat-

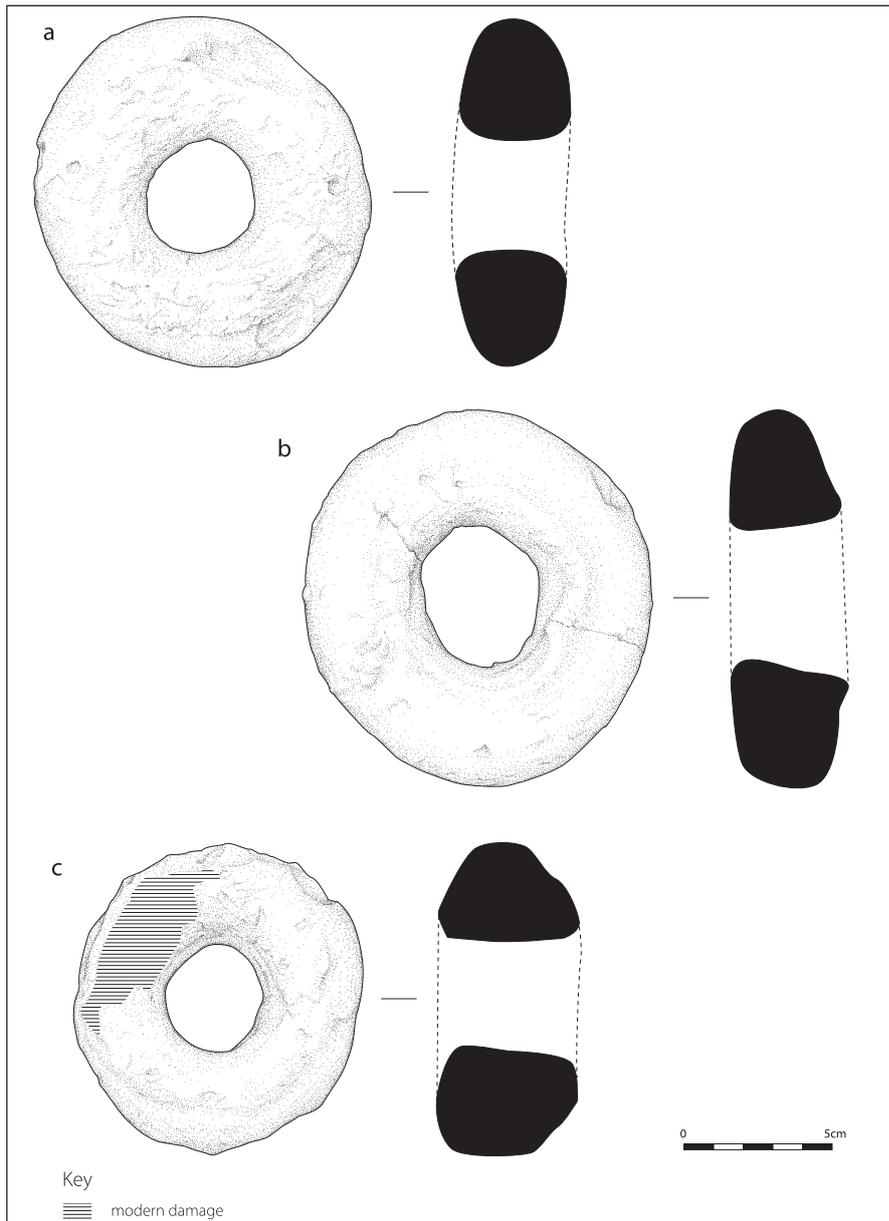


Figure 11. Ceramic loomweights a), b) and c).

tern of settlement generally occurred between the mid eight and late twelfth centuries (Oosthuizen, 2006, 145) after which settlements such as the villages located near the Fleam Dyke (a substantial defensive structure) became established. The SFB recorded as part of this project was part of this earlier, dispersed settlement pattern.

Conclusion

The archaeological investigations at Wadlow Farm revealed evidence that the landscape was exploited in the Neolithic, the late Bronze Age to Iron Age and the Anglo-Saxon periods. Despite the extensive mechanical ploughing regime which has taken place on the site over the previous half century, substantial remains still survive. Neolithic quarry pits demonstrate

how communities took advantage of the raw materials available to them. From the late Bronze Age onwards, the land began to be demarcated and cultivated; an activity that continued into the Iron Age and beyond, when livestock were being kept. By the Anglo-Saxon period, textile manufacturing was taking place in at least one SFB located close to the Fleam Dyke.

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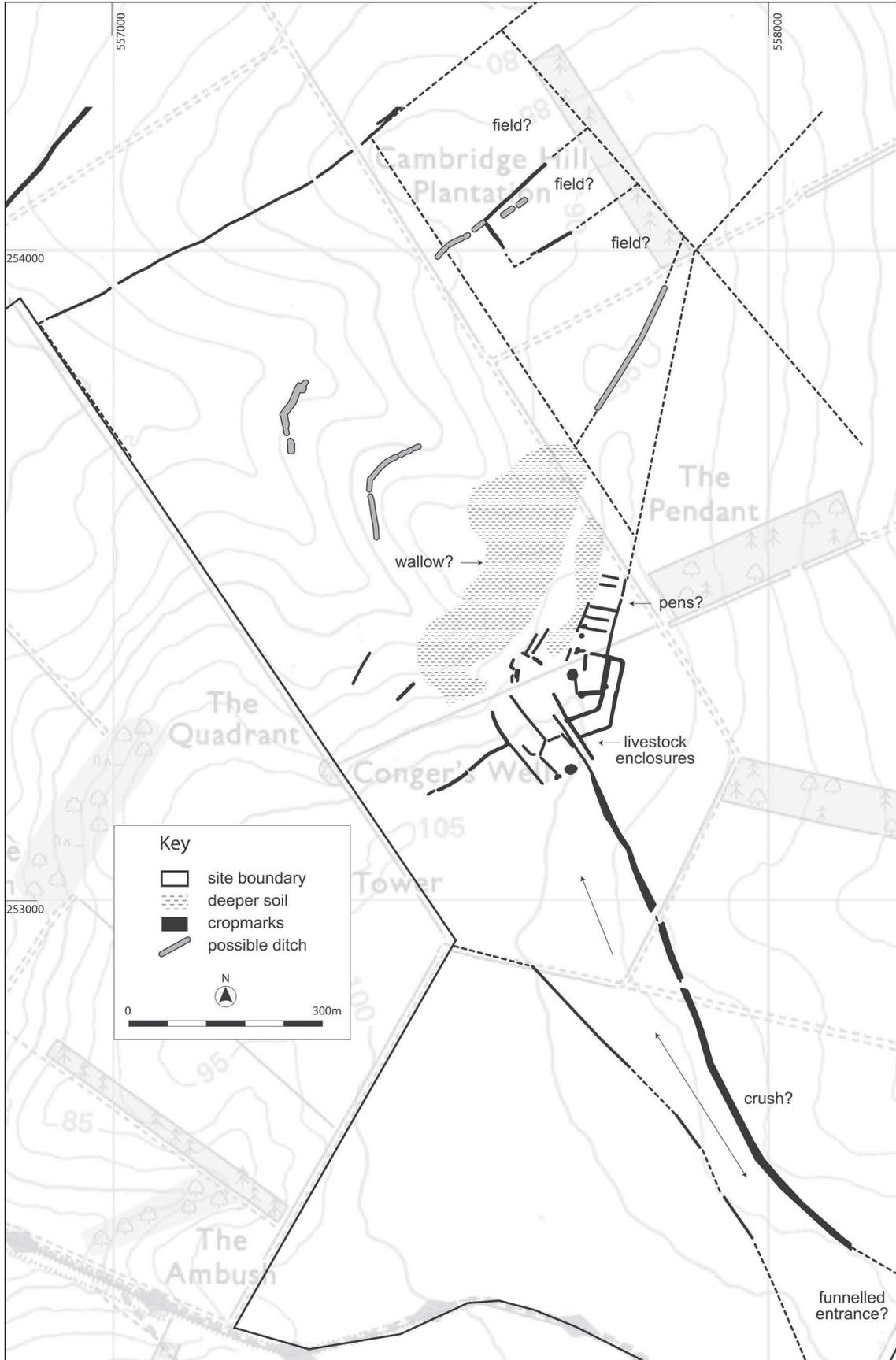


Figure 12. Hypothetical field systems and livestock movement from cropmark evidence.

remains at Wadlow and other local sites, as did Andy Thomas who also monitored the work on behalf of CAPCA.

The trial trench evaluation was supervised by Elisabeth Jones, with excavation carried out under Kirsty Dingwall and Nuala C. Woodley. Excavation was carried out by Tegan Daly, Joe Doran, Katie Hutton, Paul Masser, John McCarthy, James McMeekin, James McNicoll-Norbury, Kevin Paton and Alistair Robertson. Processing and preliminary recording of the finds by Julie Franklin, while soil samples were processed by Steve Roe. Analysis was undertaken by the following specialists: pottery, Ian Rowlandson and Jane Young; Lithics and ceramic loomweights; charcoal and charred plant remains, Sarah-Jane Haston, Laura Bailey and Scott Timpany; faunal, Tim Holden. Documentary research was carried out by Nuala Woodley in the Cambridgeshire Historic Environment Record Office (CHER) which was aided by and discussed with Sally Croft of the CHER.

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The Identification of a Later Bronze Age Hoard at Barway, and Consideration of the Association between Metalwork and Causeways

David Barrowclough

A metalwork hoard dated to the Wilburton phase of the later Bronze Age, found at Barway close to the Isle of Ely in the Cambridgeshire Fens, is reported. Consideration of the hoard, in the context of later prehistoric hoarding in the local landscape, reveals that particular sorts of artefact were associated with particular places in the landscape. In particular a strong association between later Bronze Age hoards and causeways connecting the Isle of Ely to the outside world is identified, and an interpretation suggested. This study demonstrates the potential of a detailed contextual approach for providing a more nuanced understanding of later Bronze Age metalwork deposition that moves away from a simplistic wet-dry dichotomy.

Introduction

In recent years archaeologists have increasingly come to accept that prehistoric peoples deliberately deposited items in the ground, often in a structured way. This practice, known as hoarding, was particularly prevalent in the later Bronze Age of Britain and Ireland when metal artefacts ranging from a pair of objects to dozens or even hundred of items were placed in the ground. The traditional division of hoards between those placed in watery places, rivers, bogs and meres, and those buried on dry land, interprets the former as ritual offerings and the latter as either the metal-smith's raw material or as an individual's cache hidden for security, is over simplistic. Over the last 15 years a body of literature has developed the idea that different types of water played host to particular types of deposits. Perhaps the most intriguing of these is the suggestion that causeways were the focus of repeated deposits of metalwork. A new opportunity to develop this idea arose following the discovery of a hoard of later Bronze Age (c. 1400–700 BC) metalwork alongside the prehistoric causeway that connected the island of Ely to the mainland of Cambridgeshire. The aims of this paper are twofold: to present supporting evidence for this suggestion in the form of new evidence for metalwork deposition along the causeway between Little Thetford and Barway (Fordy), and then to offer an interpretation which helps us to understand this behaviour.

Background

In the summer of 2011 the writer was introduced to Phillip Randall by his colleague Kate Morrison-Ayres. She, having already met him, identified that his collection of artefacts and supporting documentation together comprised an important archaeological resource. The Randalls had for several generations been farmers and landowners of arable land to the east of the River Great Ouse at Barway, until recently when the family farm was sold. Over a period of almost a hundred years the family had amassed a large collection of later Bronze Age metalwork, the majority of which had come from a single field. It is impossible to say with certainty precisely how many artefacts and of what type came from their farm. Difficulty stems from the fact that the objects have never been in one place at any one time. Instead the finds have been divided between Mr Randall senior and his three sons, various farm workers who ploughed the land, and an unknown number of 'nighthawks' who illegally metal detected on the land. Matters are complicated further by the fact that the oldest brother whose collection was the largest and contained the 'choicest' pieces, emigrated to Australia some years ago taking his collection with him.

Thanks to Phillip Randall it has nonetheless been possible to make progress in reconstructing the contents of the hoard. Over a period of approximately thirty years he meticulously marked on a detailed Ordnance Survey map the precise location of each of the artefacts that he found (Fig 1 & Plate 1), many of which he donated to the museum in Ely. It is thanks to his foresight that it has been possible to begin to understand something of the depositional practices of the later Bronze Age.

The Finds

Although we will never know the precise number and types of finds we do have detailed records for the artefacts found by Phillip Randall, which serves as a sample of the range of objects in the original hoard.

The items collected by him were: nine socketed



Figure 2. The Barway hoard showing some of the objects found by Phillip Randall. From left to right, top row, chisel, remains of a spear socket, socketed axe. Bottom row, left to right, rapier, two fragments of blade, two dagger fragments, socketed axe. Photo: Steven Stanley Jugg.

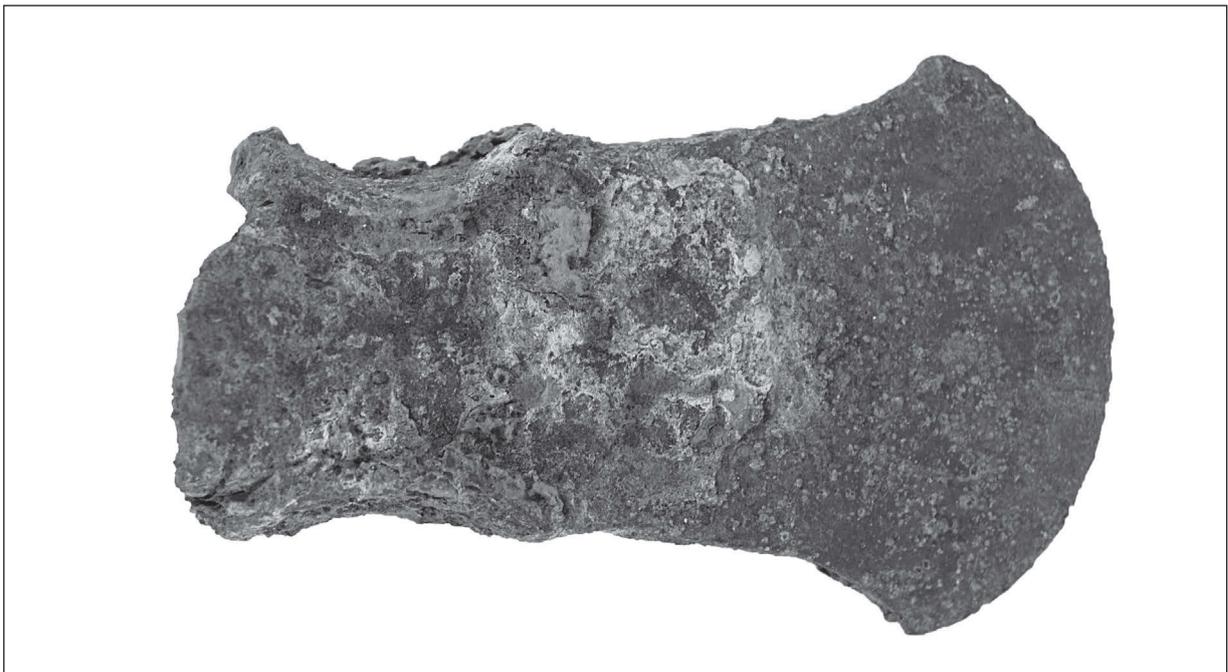
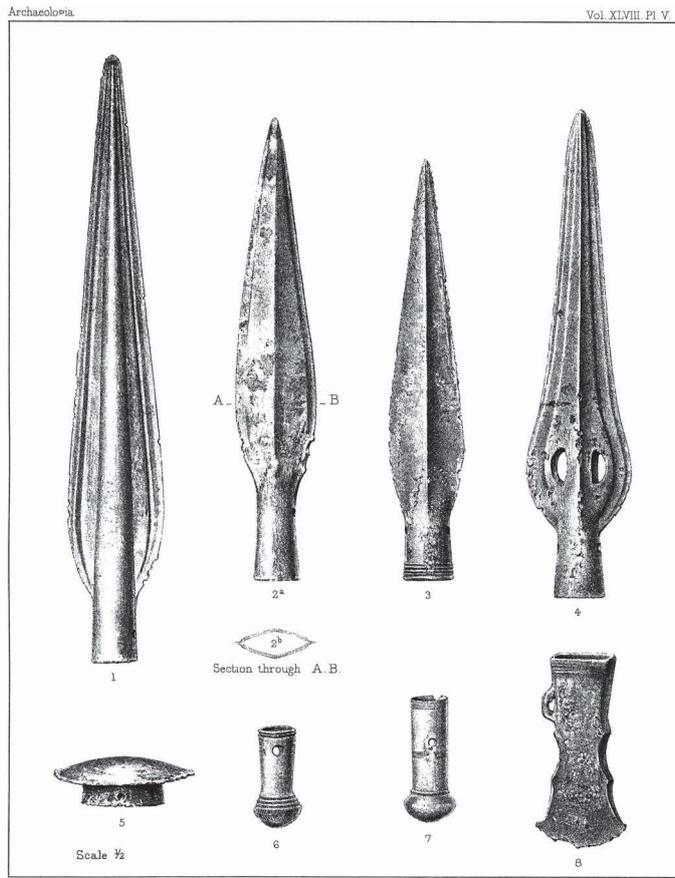


Figure 3. Socketed axe of Ulleskelf type, length 101mm, width across the blade 46mm, note the distinctive waisted shape. Photo: Steven Stanley Jugg.

ing climate are supported by the local environmental evidence. Before drainage, the Isle of Ely, was a true island emerging from the surrounding marsh land (Fig 5). Like other small islands and islets in the archipelago, such as Littleport to the north, Coveney to the west and Stuntney to the east, these were higher than the prevailing marshes and remained relatively safe from flooding, thus providing safe environments in which to settle, with a close proximity to the fens

where many resources could be exploited for food and building materials (French 2000).

Using all the available evidence it has been possible to discern a distinct island flavour to metalwork deposits in Ely. Moving beyond simplistic observations about the presence of large hoards, and the presence or absence of certain weapon types, such as swords, it has been possible to identify particular local associations between certain types of deposits



BRONZE OBJECTS FROM WILBURTON FEN, NEAR ELY.

Published by the Society of Antiquaries of London, 1883.

Figure 4. Illustration of the Wilburton hoard showing the Ulleskelf type of socketed axe, bottom right hand corner.

and particular locations, such as prehistoric causeways, that point to the inhabited insular identity.

During the early Bronze Age there would have been many active watercourses, tributaries of the River Great Ouse, creating a dendritic pattern of twisting streams and rivers across the Fens, but as the climate deteriorated later in the Bronze Age the whole area became peat covered (Hall 1996, 58), burying the roddons and spreading up the landward edges of the Isle. Only the major drainage channels of the River Great Ouse survived. It is against this background that we need to understand the construction and maintenance of the causeways that connected the Isle of Ely to 'mainland' Cambridgeshire.

The Causeway

The causeway, which ran in a direct line for at least 800m between Barway (Fordy) and Little Thetford, was discovered in 1932, by Phillip Randall's father when ploughing one of his fields. He unearthed a series of timber piles, which had been sharpened to a point at one end to assist when they had been driven into the soft clay that underlies the peat fen. Randall uprooted the posts, inverted them, and then replaced them in their original holes so as to leave them standing upright, thus the original line of the causeway can clearly be seen (Fig 6)

The causeway is located at one of the narrowest crossing points of the River Great Ouse, indicated by the place names Fordy and Thetford, and was visited by Lethbridge and Fowler who undertook a small test excavation (Lethbridge 1935, 86–89). The causeway was found to have been constructed of oak posts supporting brushwood, and was 9m wide and 800m in length. Along with a bronze armlet were sherds of later Bronze Age Deverel-Rimbury type pottery, much of which had been disturbed by plough action. Phillip Randall also reported finding small pieces of coarse Deverel-Rimbury type pottery in the same area. It is in the same field, to either side of the causeway, that Phillip Randall has found his metalwork. Another find from the area was a two-pronged flesh-hook found at Little Thetford, which would have been used to hook large joints of meat out of the cauldrons in which it was cooked. This object was also dated to the Wilburton Phase of the Late Bronze Age c. 1100–800 BC (Bowman and Needham, 2007, 81).

Hoards

The Barway hoard is one of several later Bronze Age hoards recovered from the fen edge (Fig 5). A Late Bronze Age hoard found in the fen near Stuntney, along the causeway that joins it to the Isle of Ely, in c. 1939 was first discovered by ploughing and then

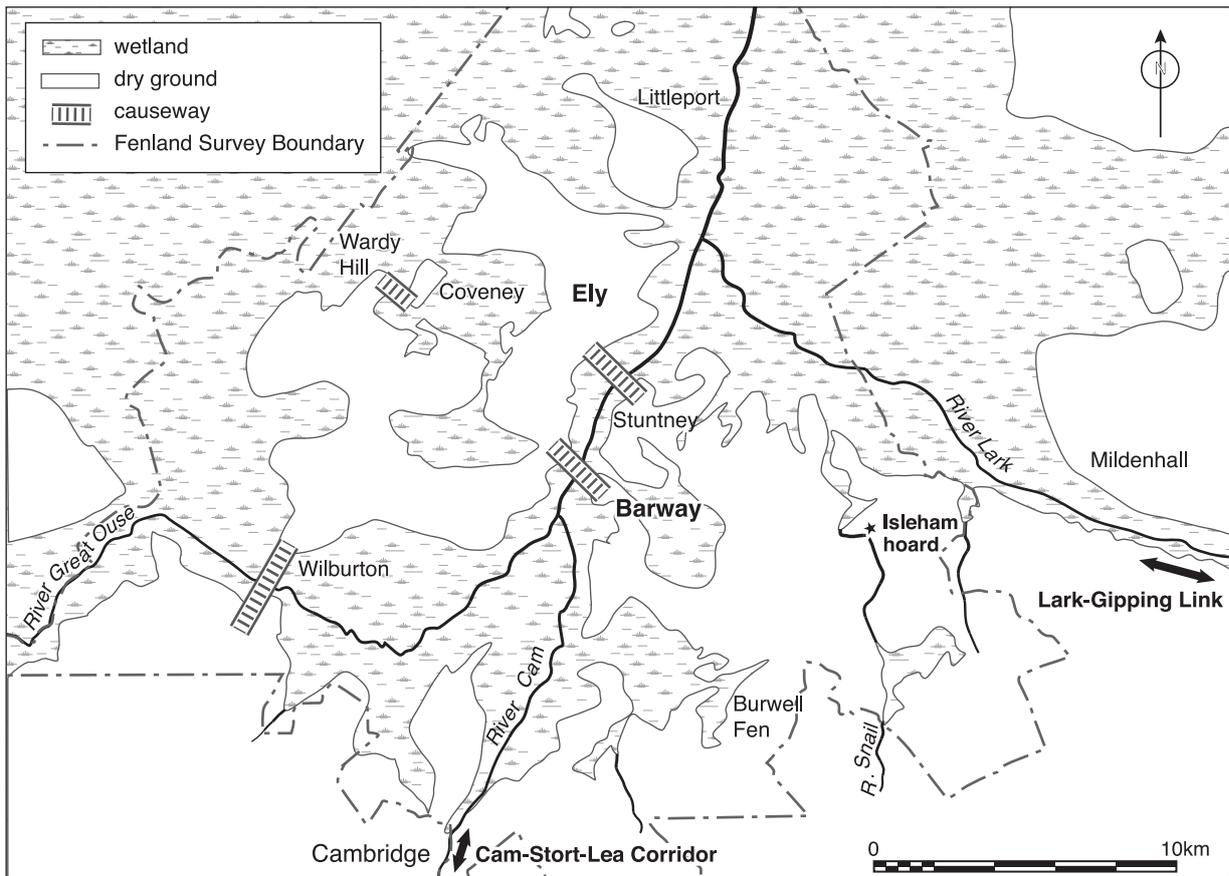


Figure 5. Map of the Isle of Ely showing the location of the causeways mentioned in the text.



Figure 6. Contemporary photograph c. 1932 of the inverted posts showing the line of the causeway. Note the pointed ends to the upturned oak piles. Photo: courtesy of Phillip Randall.

later excavated. There were over 80 objects in a cylindrical wooden tub made in two parts. Among the artefacts were three looped palstaves, socketed axes, a socketed gouge, sword fragments and ingot cakes. The typology of the implements indicate a date late in the Wilburton phase of the later Bronze Age (Clark and Godwin 1940, Brown and Blin-Stoyle 1959, Trump 1962).

Further south lies Wilburton, which is well known for its hoards of later Bronze Age metalwork. The first was discovered in Grunty Fen in 1844 in an area used by the poor for digging turf. At about a metre depth three looped axes, known as 'celts', were found and 0.3m below them a fine gold torc made of a twisted 'rod' coiled into a helix (von Hugel 1887, Taylor 1980). The metalwork is dated to the Middle Bronze Age (Brown and Blin-Stoyle 1959, 66). Another hoard, sometimes described as a founder's hoard or metal-smith's stock, was discovered in 1882. The site, occupying an area of 1.8m by 0.9m, was found in *c.* 0.7m of peat lying on clay. It contained 163 pieces that included 115 spearheads, of which 87 were complete and 28 broken; there were also one looped palstave, two socketed axes, swords, and scabbard ends (Evans 1885). Founders' hoards were defined by Evans as 'the stock-in-trade of some bronze-founder of ancient times, as they comprise worn out and broken tools and weapons, lumps of rough metal, and even moulds in the accumulation of bronze which was destined to be recast' (Evans 1881, 457).

The Wilburton hoards lend their name to the Wilburton Phase of the Bronze Age dated between 1150 and 1000 BC. Metalwork of this period is highly innovative and contains a range of new elaborate types, including extremely long and thin cast tongue chapes, hollow-bladed spearheads, cauldrons and varied accoutrements, such as the chisel found in the Barway hoard (Bowman and Needham, 2007, 96). Another radical innovation of the Wilburton smiths was their extensive use of lead as an additive to bronze. This produced alloy compositions contrasting completely with the preceding Penard phase of metallurgy, and at times with rather excessive proportions of lead rendering objects too soft to be effective cutting implements.

Found by a farmer in December 1959 when ploughing, the Isleham hoard is the largest in Britain with *c.* 6,500 bronze pieces, of which 2,500 items are from weapons and martial equipment, and 2,600 are ingots (Britton 1960; Bowman and Needham, 2007). Much of the material is similar to that in the Barway, Stuntney and Wilburton hoards, and included broken swords, socketed axes, palstaves, double-edged knives, decorated fittings and fragments of bronze vessels. This led to an interpretation of the hoard as having belonged to a founder or smith (Britton 1960, Malim 2010), much like the Wilburton hoard (above), a view supported by the presence of casting jets and pieces of moulds, although there was no evidence of casting or working on the site. A study of pollen from the site shows that the Late Bronze Age landscape was relatively clear of woodland, and was used for pasture

and arable agriculture (Malim 2010, 120). Other material included horse harness fittings and tools, as well as the cauldron and flesh-hook fragments already discussed.

The hoard had been placed in a very large ceramic Post-Deverel-Rimbury (PDR) Plainware pot dug into a pit within a Bronze Age ditch on the edge of the fen next to a rectangular house (Malim 2010, 73). This type of pottery is dated to between *c.* 1150 and 800 BC and fits well with typological analysis of the metalwork and radiocarbon dating of the site, which suggests that it is of Wilburton type and dated between 1150 and 1000 BC. Analysis of the artefacts' metallurgy shows much is of continental origin, a characteristic of Wilburton hoards, with Central Europe the probable source (Malim 2010, 74).

In addition to these, two more contemporary hoards lie within 10 km of Barway, one with broken-up weapons from Wicken Fen, and the other a pair of sheet-bronze shields from Coveney Fen (Yates and Bradley 2010, 405–415). Further away, on the western fen edge another Wilburton stage hoard has been excavated at Bradley Fen, near Peterborough (Bowman and Needham 2007, 96). Taken together these hoards represent an unrivalled concentration of Wilburton stage metalwork incorporating the most prestigious of objects and much weaponry.

Discussion

Much of the literature on later Bronze Age metalwork in the area focuses on the classification of different artefact types, and their distribution and comparison with finds from elsewhere in northern Europe. There has been surprisingly little detailed analysis of the local landscape environment of the deposits, which forms the focus of this study. Observations usually differentiate between items deposited in watery places, rivers, meres and bogs, and those deposited on dry land. The former being interpreted as ritual offerings and the latter as either 'founders' hoards', that is, as raw material to be melted down in a metal worker's foundry, or as valuables lost or hidden in time of crisis. Such interpretations are over simplistic.

Following similar work elsewhere, in Ireland (Needham 1989), the Netherlands (Fontijn 2003), and in the Fens (Yates and Bradley 2010), consideration of the Barway and other hoards reveals that particular sorts of artefact were associated with particular places in the landscape, allowing for a more nuanced understanding of metalwork deposition that moves away from a simplistic wet-dry dichotomy.

In the writer's opinion the most intriguing pattern of deposition is that of concentrations of finds alongside causeways connecting different parts of the island of Ely to each other and to the mainland. The identification of a hoard associated with the causeway leading from Little Thetford to Barway adds to pre-existing knowledge of deposits associated with causeways, including the hoard at Stuntney, which lies on the route that to this day leads to Ely. Similar

collections of metalwork are associated with Bronze and Iron Age causeways elsewhere in Britain and northern Europe. This observation suggests that this may be a widespread pattern of behaviour (Field and Parker-Pearson 2003: 179–88).

The writer's interpretation is that the Fens around the Isle of Ely represented a boundary between the Isle and the outside world, and an important aspect of these carefully selected hoard locations is that they all lie on points where that boundary is transgressed. In addition to those placed directly alongside causeways I note that Wilburton, the site of two hoards, lies on the isthmus that still connects the Isle with the Cambridge mainland, while similarly, the Isleham hoard lies on a route from Ely, via Quanea, that passes via the rivers Lark and Gipping to the east coast and a sea route to the continent (Malim 2010, 125).

The anthropologist Mary Douglas (1994) has described how the transgression of boundaries is both powerful and dangerous. As such the Fens, and in particular, crossing places may have been thought of as liminal locations, which would account for the care taken in choosing the places where deposits were made. For example, that of Isleham was only 5m from the fen edge and placed in a boundary ditch separating the domestic cultivated world of the house from the natural and uncultivated world of the fen. Douglas emphasised that the transgression of such boundaries is often circumscribed and should be maintained with ritual action. Although impossible to prove, it might not be too far fetched to believe that deposition of the hoards was related to a belief in an 'under-world'. Such a belief is widespread among many religions (Bradley 2000, 28–32). If such a world was thought to exist, then the peat bogs of the Fens might have been seen as the openings and gaps in the land by which to communicate with it. For the participants deposition represented a final loss, and whether or not those making the deposit believed in the notion of sacrifice to the supernatural or not, the different characteristics of the various types of wetland contributed to the dramatic impact of the act of deposition at Stuntney, Wilburton, Coveney and Barway–Little Thetford: the total disappearance of these objects under the black liminal waters of the Fens.

Conclusion

In the long term, the most fundamental development that takes place in the landscape during the Late Neolithic to Early Iron Age seems to be the formation of a structured cultural landscape (Fokkens 1999). Throughout the Bronze Age, the landscape became increasingly characterised by signs of the tangible, ancestral past. Barrows represented the most important and lasting intentional act of the inhabitants to shape their landscape, but to the inhabitants the ancestral nature of the landscape also came to the fore in other signs of former occupation. In the course of the Bronze Age relocating a farmstead was less a

matter of entering areas that were not yet marked by previous phases of habitation, cultivation and burial, and more a matter of returning to named places with historical ancestral meaning.

The deposition of metalwork in both watery and dry places intensified throughout the later Bronze Age, a practice found throughout northern Europe at this time (Bradley 1990). It is suggested that the significance of different types of locations, especially different watery ones, is based on widely shared religious beliefs. Whatever their precise religious motivations may have been, the presence of flowing water in rivers and still water in bogs and meres may have been qualities that gave significance to deposits (Richards 1996, 317). The qualities for which different types of water were valued may be various: purity, pollution, regeneration, fertility (Douglas 1994, 162), and the finer details of this for the prehistoric people of Ely may be inaccessible to archaeologists. What archaeology does show is that different types of watery environment were imbued with different elemental significance. This led to the differential selection of locations for the deposition of single finds and hoards, with particular places in the landscape, especially causeways, locations of intensive deposition.

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A Late Roman Well or Cistern and Ritual Deposition at Bretton Way, Peterborough

Alexandra Pickstone and James Drummond-Murray

with Stephen Boreham, Caroline Cartwright, Nina Crummy, Chris Faine, Rachel Fosberry, Quita Mould, Elizabeth Popescu and Stephen Upex.
Illustrations by Séverine Bézie, Gillian Greer and Stephen Upex

'We venerate the sources of important streams ... springs are objects of worship; the darkness of unfathomable depth of pools has made their water sacred'

Lucius Annaeus Seneca, *Letters from a Stoic*,
Letter XLI (Trans. Campbell 1979, 87)

Excavation of a small Romano-British settlement at Bretton Way, Peterborough was unexceptional apart from one extraordinary feature – a well or cistern, dating from the late 3rd to early 4th century and constructed from massive stone blocks re-used from a monumental building. The labour required to construct such a structure strongly suggests more than a purely utilitarian function. The late 4th-century deposits it contained indicate various possible 'ritual' elements, alongside more conventional rubbish disposal, but a definitive interpretation remains elusive.

Location, Geology and Topography (Fig. 1)

Archaeological investigations were conducted on a 0.35ha site located in Bretton, on the western side of Peterborough (TF 1600 0770; Fig. 1). The site lies to the west of Bretton Way, with Grimeshaw Wood to the north and farmland to the west. Temporary offices had occupied the area during the early 1990s, although prior to excavation it was disused and under scrub.

The site lies at approximately 22m OD, to the north of the River Nene and west of the Cambridgeshire Fens. The underlying geology is Cornbrash limestone (British Geological Survey 1984, sheet E158).

Project Background

Oxford Archaeology East undertook an archaeological excavation during October and November 2010 in advance of the construction of a neurological care unit for P.J. Care Ltd. These works followed an archaeological evaluation conducted by Northamptonshire Archaeology which had revealed ditches and gullies dating to the 3rd to 4th centuries AD. The evaluation also identified concrete strip foundations and evidence that the site had been levelled, resulting in

the truncation of the subsoil and in places the natural substrate (Taylor 2010).

The site archive is currently held at OA East's offices under the site code PETBET10 and will be deposited with Peterborough Museum Archives in due course.

Archaeological and Historical Background (Fig. 2)

Extending along the Nene Valley, approximately 5km to the south-west of Bretton Way, are the best known Roman archaeological remains of the area. These were serviced by a network of Roman roads, including Ermine Street and the Fen Causeway, with river crossings identified at *Durobrivae*, Gunwade Ferry and Longthorpe. Another probable crossing point may have existed near Botolph Bridge (Upex 2008, fig 13; Spoerry and Atkins, in press).

The Roman town and fort at *Durobrivae*, Water Newton (Scheduled Ancient Monument (SAM) 130) lay to the south of the River Nene on the line of Ermine Street. The town's industrial zone was located during excavations at Normangate Field (SAM PE127). Extensive Roman remains found at Castor include the 'palace' or *praetorium* (Artis 1828; Upex 2011; SAM PE93). The military forts at Longthorpe (Dannell and Wild 1987, SAM PE135) and Sutton Cross (SAM PE138) lay relatively close to the subject site. Strung out along the River Nene and Ermine Street to the south-west of Bretton Way were various villas, including those at Mill Hill, Castor (SAM PE128), Sibson Hollow (SAM PE126) and Sutton Field (SAM PE125). Limited investigation has also been conducted on another villa to the north of Oxy Wood, Upton (Challands 1975; SAM PE132).

In terms of the subject site itself, topsoil stripping in the 1990s found Iron Age and Roman coins and pottery (Peterborough Historic Environment Record (PHER) 51164), providing good evidence of a settlement on or adjacent to the development area. Traces of various high status buildings have been found relatively close to the site. These notably include a large Iron Age enclosure and subsequent Roman villa at Itter Crescent, just over 2km to the north-east of



Figure 1. Site location.

Bretton Way (Pickstone 2011, PHER 52146). Expansion of Peterborough in the 1970s led to two rescue excavations at Marholm Road, approximately 1.5km to the north of the subject site (Challands 1972, PHER 02189; Jones 1974, PHER 00936). Here a Roman farmstead was found, together with tesserae, ashlar masonry and hypocaust tile, suggesting the presence of a substantial building nearby.

To the south-east of Bretton Way lies the substantial yet little understood Iron Age and Romano-British complex at Westwood (PHER 01751), which was investigated predominantly during the latter half of the 19th century. This extensive settlement, covering approximately 80ha, may have represented a 'Roman village' at the very least (Walker 1899). The area immediately south of Westwood Bridge provides much of the evidence, notably including two stone-lined wells, tiles and stone slabs from buildings and a cemetery of about forty inhumation burials. Further elements of this settlement have now been identified at Westfield Road and Mayor's Walk (Palmer 1998, PHER 51879; Hatton 2003, PHER 51758). At the more northerly site (PHER 51879), the remains of a high status Roman building were represented by fragments of flue tiles, mortared floors and plastered walls. At Mayor's Walk, the presence of tile and limestone rubble suggests that another substantial building lay nearby.

Extensive evidence for rural Iron Age and Roman settlement has been discovered due south of Bretton Way. Sites include Lynch Farm (SAM PE182), adjacent to Longthorpe fort (PHER 01383), and at two sites in Orton Longueville (SAM PE123; SAM PE134). Excavations at the Werrington Enclosure, c. 2km to the north, also revealed traces of Iron Age and Roman rural settlement and enclosure systems (Mackreth 1988; PHER 00563).

The Settlement (Figs 3–5)

The earliest evidence for occupation of the Bretton Way site consisted of a possible Late Iron Age round-house drip gully (Fig. 3), surrounded by the remnants of other gullies, curvilinear features and pits. Most of the related pottery is Late Iron Age Shell Gritted Ware, although one sherd may be attributed to the Longthorpe military kilns, which would place it in the mid 1st century AD. A shift away from the Iron Age settlement occurred in the later 1st century AD, when two enclosures, a few ditches and a pit were present. One ditch yielded pottery similar to that from both the Longthorpe military works depot and the settlement complex at Lynch Farm II, which also has a military installation. This may suggest some linkage between the military and sites such as Bretton Way which appear to be largely native in tradition. Perhaps supporting this suggestion, albeit of later date, is a fragment of an auxiliary cavalry harness pendant, found unstratified. Its distinctive elongated and curved form is matched by examples from mid to late Roman contexts at the forts on the German *limes* (Oldenstein 1976,

124–7, tafn 29–30). It therefore provides evidence for continental incomers on the site, suggesting that some at least may have been military personnel.

The early Roman (c. AD 43 – late 2nd century) enclosure system on the western edge of the development area (consisting of a curving ditch aligned broadly north to south) was altered in the late 2nd to early 3rd century with the establishment of a significant boundary ditch aligned east to west. In the southern part of the site lay a ditch with a bend part way along it which was to become the location of the subsequent stone-lined well/cistern.

By the middle of the 3rd century AD a rectilinear field system extended across the western part of the site, with the main focus of settlement evidently lying elsewhere. Much of the associated pottery is abraded and residual. Two coins from the upper fill of one ditch date to the late 3rd and late 4th centuries (a worn irregular radiate *antoninianus* and a worn AE3 of Gratian respectively). One field housed a waterhole (measuring c. 5m in diameter and 1.5m deep). Its basal waterlogged fills contained pottery dating to the 2nd and 3rd century, while 3rd- to 4th-century pottery came from the upper fills. It also yielded an armlet fragment with a cast multiple-motif armlet of probable late 4th century date. A sample from fills of the waterhole contained only a few charred cereal grains.

The late 3rd to early 4th century saw an intensification of activity, focused on an aisled barn and adjacent stone-lined well or cistern. Two ditches flanked the barn, while a line of five pits containing a little pottery lay to the north-west (Fig. 3).

The large aisled building (measuring 21m from east-west and 8.5m from north-south, Fig. 4) was formed by seven pairs of large postholes, spaced between 2.2–2.4m apart. Just to the east, a possible beam slot and small posthole were the only features potentially associated with the external superstructure of the building, while four other postholes sited within the building's footprint are of uncertain date. Approximately 4kg of pottery was recovered from the postholes, most of which is abraded and probably residual. The latest sherds date to the late 3rd or early 4th century: the presence of a large sherd of an imitation samian form 31 in Lower Nene Valley Colour Coated ware (posthole 306) suggests a possible date of c. AD 300 and c. AD 350 for the construction of the building. Most of the metalwork associated with the barn consists of nails (x 14). Other items include an iron punch (from posthole 64), a composite box stud (posthole 80), and a copper-alloy sheet fitting, possibly a crude strap-end (posthole 105).

Late 3rd- to 4th-century pottery dominates the site assemblage, with a total of 1087 sherds weighing 20,100g (31.8% of the total sherd count and 47.2% of the total weight of pottery from the site). The assemblage largely consists of lower Nene valley grey ware and lower Nene valley colour coated wares. Roman shell-gritted wares and lower Nene valley cream and white ware are also present in significant amounts. The mass production of the lower Nene valley prod-

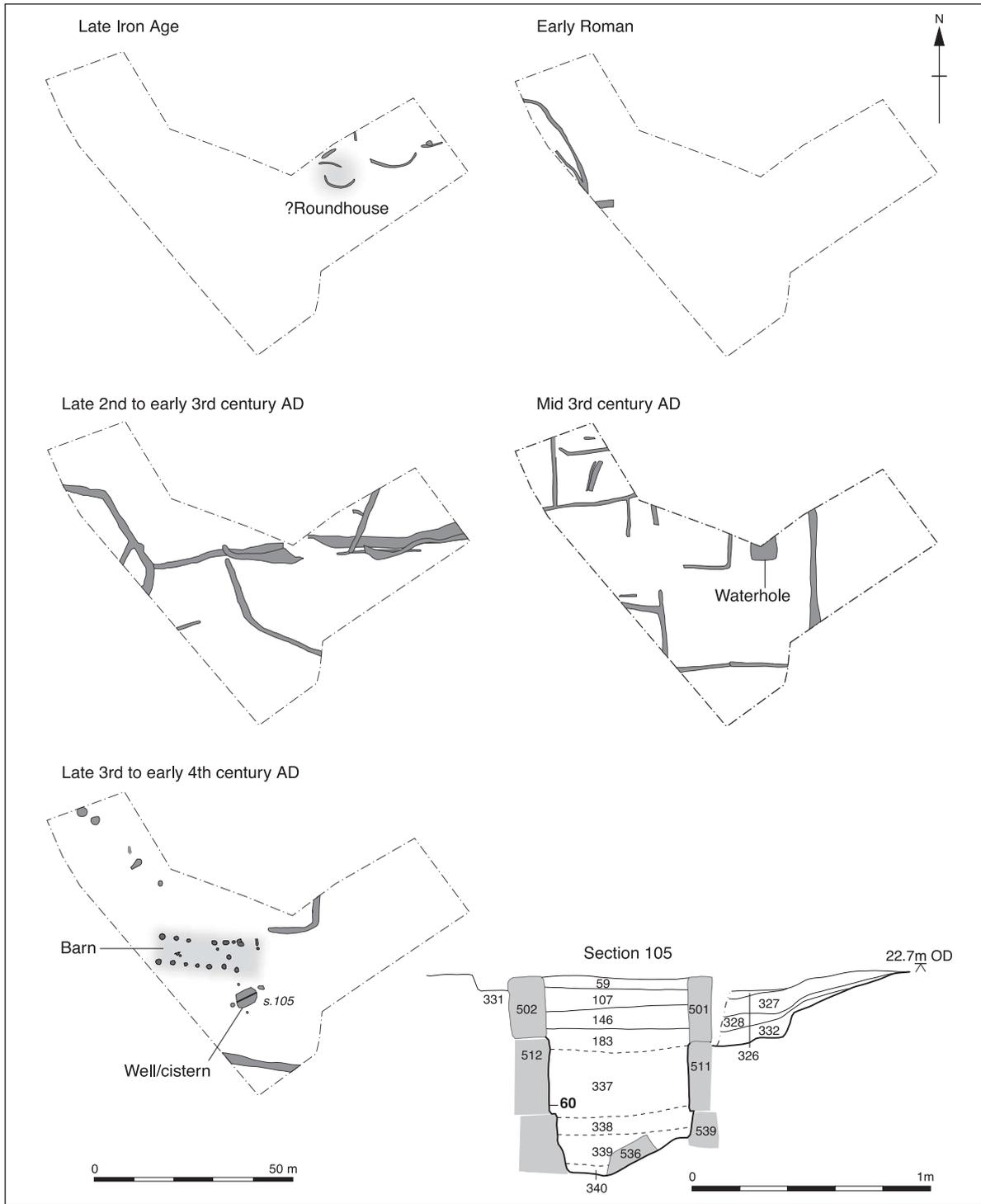


Figure 3. Phased plan, showing section across the well/cistern.

ucts at this period is evident, with little pottery being present that was not made within perhaps a 16km radius of the site. There is a total exclusion of wares derived from upper Nene valley production centres and the only imports that appear within the assemblage are products from the Oxford kilns, which are now recognised as common place on rural sites in the area at this period.

The Well/Cistern (Figs 3 and 5–7)

Just to the south-east of the barn lay the stone-lined well or cistern (henceforth referred to as a well). Prior to excavation, it was visible on the ground surface as a sub-rectangular feature measuring approximately 5m by 3.5m which was filled with a dark brownish grey silty clay (59). This upper fill was initially di-

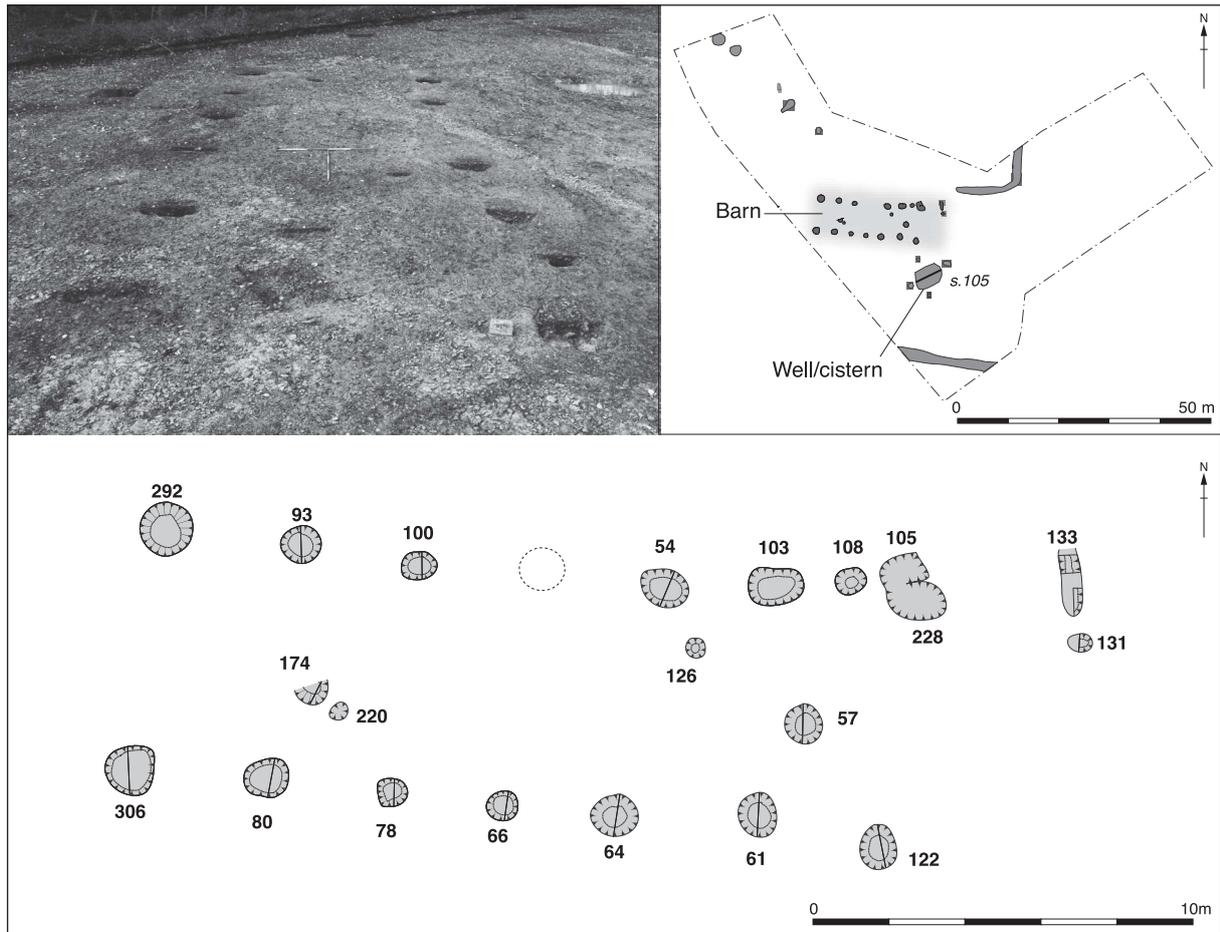


Figure 4. Detail of the aisled barn.

vided into quadrants for excavation, although this approach ceased on discovery of the masonry lining, when 100% excavation of the fills commenced. Fill 59 contained various items including a late 3rd-century minim and two whetstones.

The construction cut (60) measured 6.5m from north-east to south-west and 3.5m from north-west to south-east, with a maximum depth of 2.5m at the centre of the feature. Its eastern edge was gradually sloping for a distance of 2.5m before becoming vertical, with the remaining three sides being near vertical (Fig. 3, Section 105). The small quantity of pottery recovered from fills of the construction cut suggests that it was built no earlier than the late 3rd and more probably the early 4th century. Also recovered were two pottery discs/bases (see Upex, below). In addition, an iron awl was recovered from these fills.

Sunk into the natural 'cornbrash' limestone geology, the base of the well itself reached to the level of the underlying clays. During construction, access to the feature would have been provided by its sloping north-eastern side. Large masonry blocks were then placed around the three vertical sides, with clay and rubble packing used as a waterproofing layer between the blocks and construction cut. Water gushed into the feature during excavation, perhaps as the re-

sult of a locally high water table, or the presence of a previously unknown spring.

The masonry used to create the lining consisted of 36 huge limestone blocks. These had clearly come from a local monumental structure. There is no evidence to suggest that the stones had been shaped to fit the construction cut; rather, the blocks were chosen to 'best-fit'. The faces of the largest stones measured c. 2.30m wide by 0.84m high, with a great variety of forms being observed. The blocks are of sufficiently similar petrology to have come from the same primary source. The stone is a Middle Jurassic oolitic limestone containing a small number of other fossils. An obvious source for the stone should have been the Barnack Rag, extensively quarried just outside the village of Barnack, about 10km north-west of Bretton Way at the famous 'Hills and Holes'. However, the ooliths in the Bretton Way stones are crumbly and fragile, giving the stone the appearance of limestones from the Great Oolite, which are spar-prominent (Palmer 2008). Lincolnshire Limestone types tend to be mainly formed of ooliths with a less significant matrix and this stone is not typical of the grain-prominent local Barnack Rag. However, the lengthy burial of the stone, as demonstrated by many of the weathered faces, has affected its appearance, making



Figure 5. The well/cistern before excavation.



Figure 6. The well/cistern during excavation.

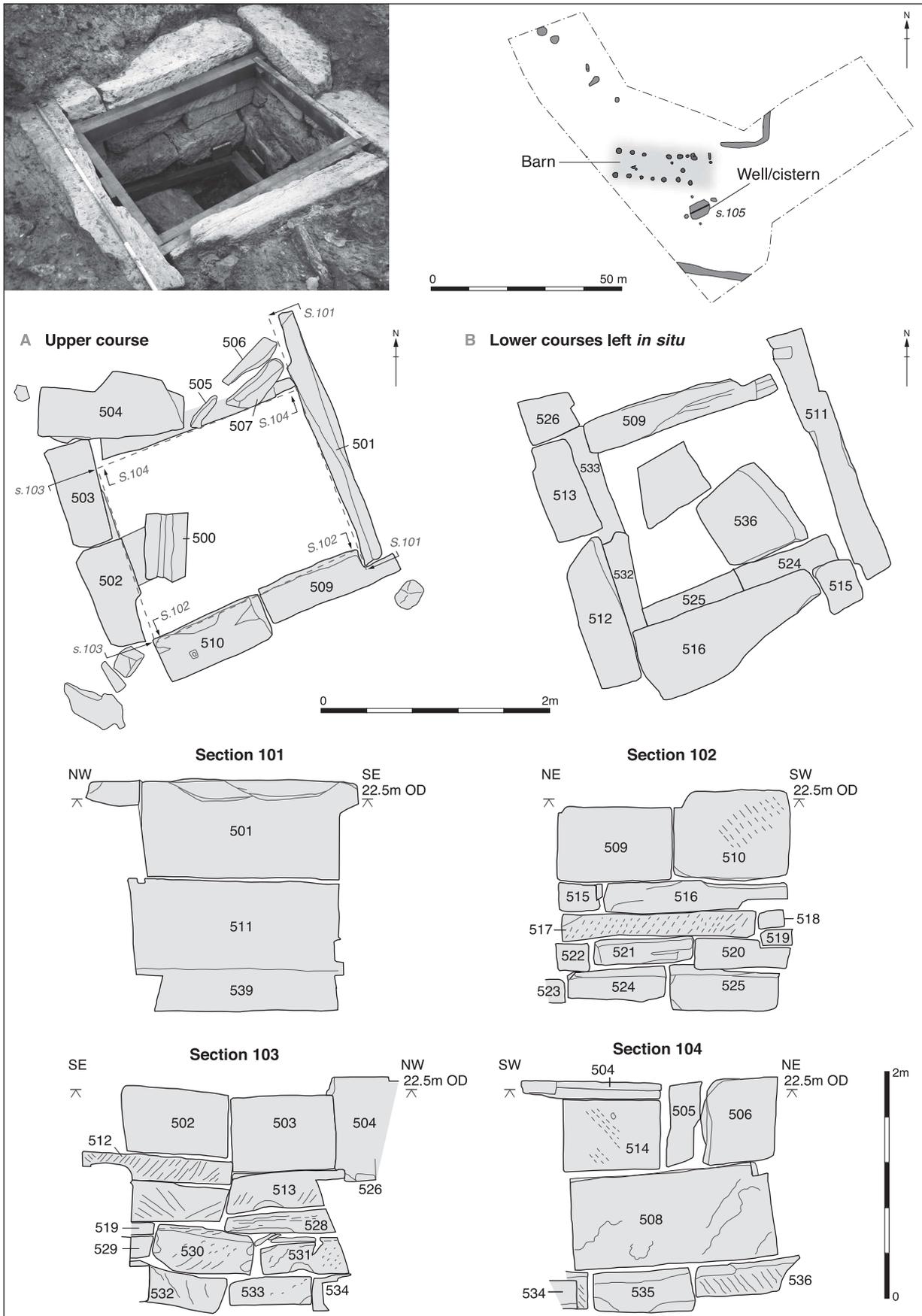


Figure 7. Constructional details of the well/cistern.

an absolute identification impossible.

The two largest masonry slabs (501 and 511) were used to 'close' the north-eastern side of the well: these had apparently been put in place without the use of clay packing. Unlike the other sides of the feature, the masonry was not placed upon the base of the cut in this location but a gap of approximately 0.4m was left; in this void a near complete bowl was discovered (see Upex below, No. 27), possibly deposited at the time of construction. This vessel is in a long-lived ceramic form (imitation samian form 38), that was produced in the Nene Valley kilns between the second half of the 2nd century and the late 4th to early 5th century.

Four postholes surrounding the well may provide evidence for a lifting device which would have enabled the masonry blocks to be lowered into place, or for a surrounding building or covering. The postholes occurred in two pairs on opposing sides of the well. The first pair measured 1m in diameter and up to 0.03m deep, while the second pair measured 0.50m in diameter and 0.15m deep. Pottery recovered from the postholes dates to the late 3rd to mid 4th century.

Once the lining was in place, the shallower north-eastern side of the construction cut was backfilled with a series of deposits (Fig. 3, Section 150, fills 332, 328 and 327). Of these, layer 328 appeared to be a possible construction surface, since it contained a high proportion of degraded limestone.

Due to the depth of the feature and associated health and safety considerations, the upper levels of masonry were removed carefully by machine prior to commencement of the excavation of the lower fills which were excavated as 'spits' to enable any possible patterns of finds deposition to be identified. The lowest 2m of the fills were waterlogged (340, 339, 338, 337 and 183). Water ingress at the time of excavation made the identification of any subtle colour changes in the deposits impossible. These waterlogged fills were very dark grey, organic clayey silts and contained large and varied finds and environmental assemblages (Table 1). The upper fills (146, 107 and 59) were not waterlogged, but were also finds-rich. The diagnostic finds indicate that infilling of the well took place in the late 4th century.

Table 1. Finds from the well/cistern, by fill.

Fill	Pottery (kg)	Pottery details	Animal Bone (kg)	Animal bone details	Small finds	Details	Qty	Illustration
59	7.225	3rd-4th century	2.459		Pottery discs/bases Coin (SF 522) Nails Whetstones (SF 31a and b)	Minim AD 270–94	2 1 2 1	
107	1.010	3rd-4th century	0.889		Coin (SF 326) Copper alloy belt-plate (SF 24)	Constantinian/ Valentinian. ML 4th century	1 1	
146	2.000	Late 4th century	1.328		Coin (SF 28) Nails Pottery disc/base	Constantine AD 330-360	1 2 1	
183	0.403	3rd-4th century	2.738		Bone sledge runner (SF 72) Pottery disc/base		1 1	Fig. 14
337	4.100	3rd-4th century. Complete RSGW jar Complete LNVCCW jar	36.112	Drilled cattle skull (Fig. 17) Dog skull (partial) Red deer antler burr (tines removed) Worked cattle scapula Worked cattle mandible Articulated cattle (x 2)	Pottery discs/bases Lead eyelet (SF 56) Iron bucket hoop frags (SF 46/62) Iron hobnails Leather shoes		9 1 2 3 5	Fig. 13, Nos. 35 and 36 Fig. 9
338	1.903	Late 4th century Complete LNVCCW imitation samian bowl (No. 27)	8.039	Cattle crania	Pottery discs/bases Iron bucket hoop frag (SF 61) Iron hobnails Bone sledge runner (SF 87) Leather shoes Folded birch bark 'curses'		5 2 3 1 6 3	Fig. 13, No. 37 Fig. 9 Fig. 15 Fig. 14
339	1.570	3rd-4th century	2.294		Iron hobnail Leather shoe Pottery disc/base		1 1 1	
340	1.403	Late 4th century	1.524		Iron and organic pendant (SF 57) Iron hobnail Leather shoes Pottery disc/base		1 1 4 1	Fig. 8
Total	19.614		55.383					

Finds and Environmental Evidence from the Well

Coins

Nina Crummy

Three coins were recovered from the upper well fills (146, 107 and 59). Two are worn 4th-century issues. One is an irregular copy of the House of Constantine, probably with falling horseman reverse (which would date it to *c.* AD 350–60). The other, with its reverse image and legend completely worn away, cannot be positively identified but belongs to either the House of Constantine or the House of Valentinian (maximum date range *c.* AD 330–78). Given the degree of wear on these coins, both were in circulation for some time before being lost, implying a date no earlier than the late 4th century for the formation of the upper fills. The worn late 3rd-century coin found in the uppermost fill (59) was clearly residual.

The use of coins as votives in watery contexts is particularly well demonstrated at the Sacred Spring at Bath and at Coventina's Well in Northumberland, where large numbers were deposited over many generations (Walker 1988; Allason-Jones & McKay 1985), but with such a low number present at Bretton Way and no coins at all in the lower fills of the well, it seems unlikely that the items in the upper fills were deposited during ritual activity.

Metalwork (Figs 8–9)

Nina Crummy

Most of the metal objects from the well came from its lower fills, although an undiagnostic copper alloy belt-plate came from fill 107 (SF 24, not illustrated). From the lowest waterlogged level (340) came a hobnail (SF 66) from leather footwear and an unusual pendant amulet (Fig. 8, SF 57). The latter consists of a decayed ovoid mass of organic material, probably mineral-replaced leather, that had been moulded around an iron bar. The top of the bar is rolled over to form a loop, into which is fitted a copper-alloy suspension ring. This item falls within at least two, and possibly four, of the five amuletic groups defined by Pauli: first, noise-making objects; second, objects of meaningful shape; third, objects with special external qualities; fourth, curiosities and remarkable objects; and fifth, objects made of a material valued for special qualities (1975, 116–35). At the very least the pendant belongs to the first and fourth group, and at the most into the first, second, third and fourth. Further consideration on this issue is given in the general discussion below.

From the waterlogged layers above the amulet (339, 338, 337 and 183) came more hobnails from leather footwear, a lead eyelet and an iron hoop from a wooden stave-built bucket. The bucket may have been attached to a wooden superstructure represented by the postholes set around the well. The bucket hoop (Fig. 9, SF 46/61/62) is slightly splay-sided and was found in several pieces in contexts 337 and 338. There are patches of distinctive blue vivianite corrosion on its surface,

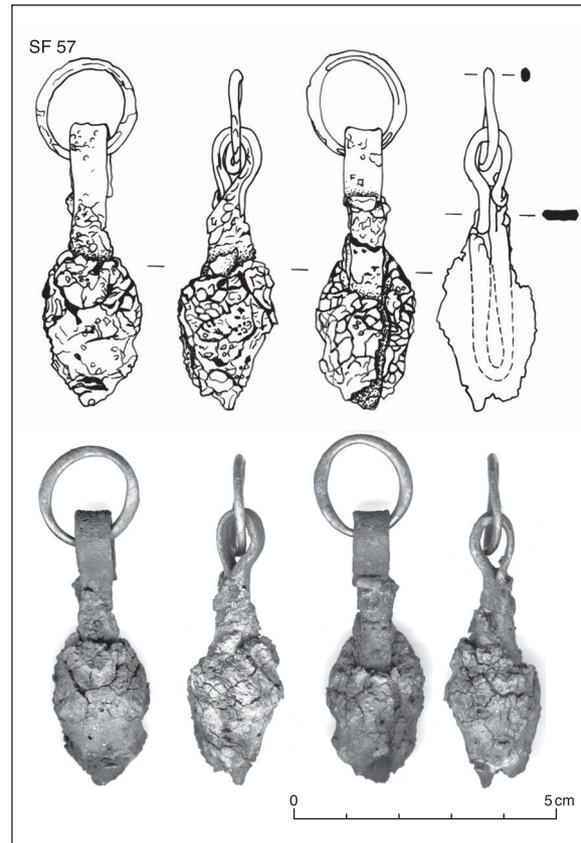


Figure 8. Pendant amulet from the well/cistern.

SF 57. Pendant consisting of a decayed ovoid mass of what may be burnt and mineral-replaced leather moulded around an iron bar that is rolled over at the top to form a suspension loop with everted terminal. A copper-alloy ring is fitted through the loop. Total length 65mm, maximum diameter 19mm, maximum diameter of ring 19mm. (340), lower fill of well 60.

and on two of the hobnails; this substance is formed on iron objects in wet soils in the presence of phosphate ions, perhaps derived from decaying animal bone (Scott and Eggert 2007). Hoops of this type were made as continuous bands of iron, then hammered down over the staves, with the splaying allowing for the bucket's gradually increasing diameter from bottom to top. They often also served to fix in place two iron side plates with pierced tops into which the handle was fixed. The lead eyelet (SF 56) probably came from such a plate and may be a repair. The Bretton Way hoop, with an internal diameter of about 305mm, would have come from a comparatively large bucket. Two well-preserved buckets from Newstead, Scottish Borders, measured 204mm and 267mm in diameter at the top, two hoops from Blakeney, Gloucestershire, had maximum internal diameters of 183 and 216mm, and several Romano-British bucket hoops in the collections of the British Museum have diameters of between 195 and 355mm (Curle 1911, 310; Crummy 2000, 46; Manning 1985, 103).

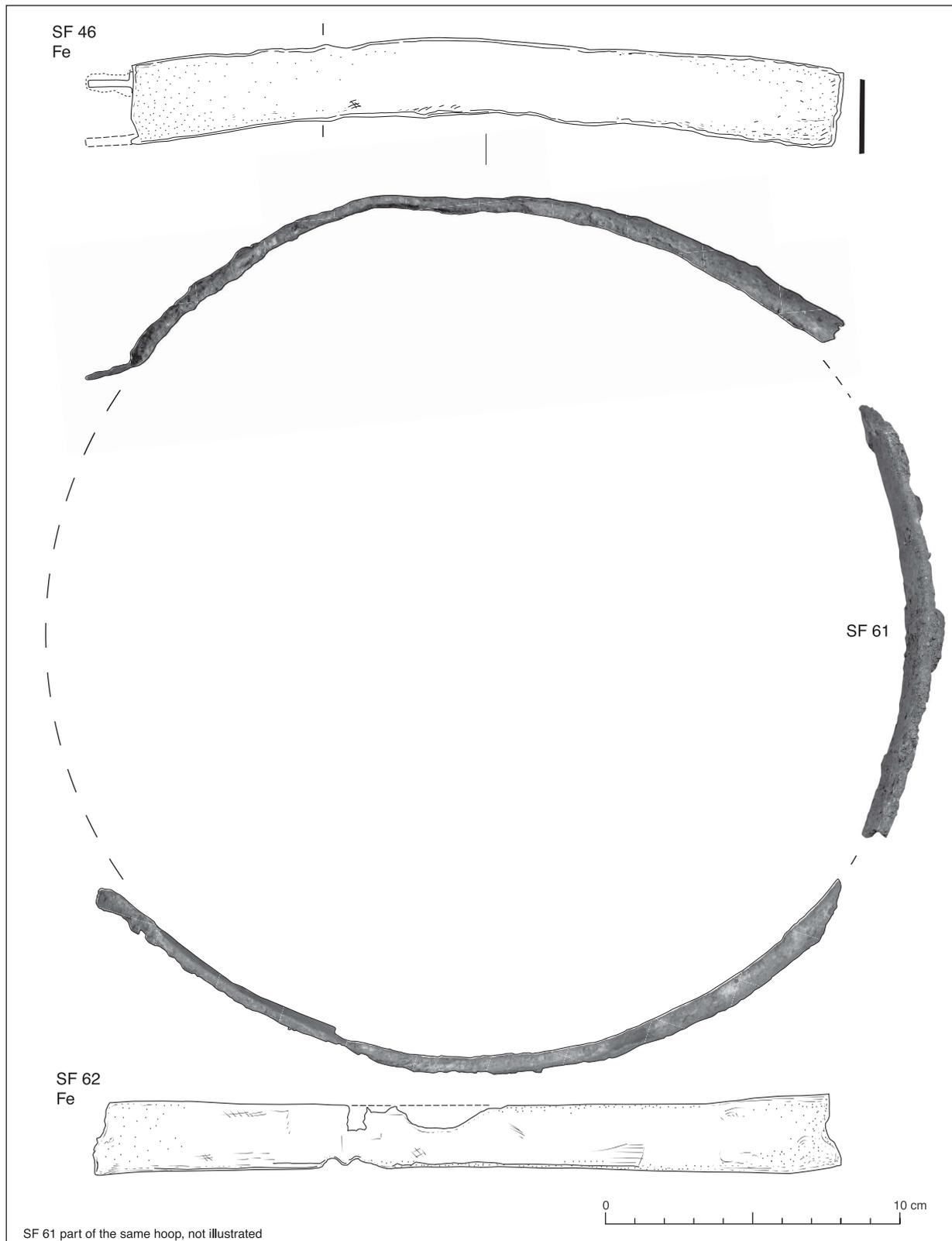


Figure 9. Iron bucket straps from the well/cistern.

SFs 46/61/62. (337) and (338), lower fill of well 60. Three fragments from a slightly splayed iron bucket hoop. Width 21-24 mm, thickness 2-3 mm. Internal diameter approximately 305 mm. When complete, the hoop would have been welded into a continuous band that was held in place around the wooden staves not by nails but by knocking it down until it fitted securely.

Pottery (Figs 10–13)
Stephen Upex

The ceramic assemblage from the well and fills of the construction cut was 934 sherds, weight 23,105g, estimated vessel equivalent (EVE) 71.25 (Table 2). It represents 28.6% of the total number of sherds from the site: the average sherd weight for the site as a whole is 13.05g, but from the well it is 24.7g.

Table 2. Quantification of pottery from the well/cistern, by fill. * = construction layers outside of the main stone lining.

Context	Sherds		Weight (kg)		EVE	
	Number	% of site total		% of site total		%
59	458	14.0	7.225	16.98	30.28	
107	45		1.010		0.70	
146	159	4.8	2.000		2.20	
183	12		0.403		4.15	
184*	7		0.260		0.32	
324*	64		2.722	6.39	1.50	
326*	2		0.022			
327*	6		0.290		0.10	
334*	8		0.197		1.30	
337	86		4.100	9.63	24.90	
338	46		1.903		0.60	
339	25		1.570		5.10	
340	16		1.403		0.10	
Totals	934	28.6	23.105	54.3	71.25	84.8

Most of the fills contained Lower Nene Valley Grey Wares (LNVGW), Lower Nene Valley Colour Coated Ware (LNVCCW) and Lower Nene Valley Cream and White Ware (LNVCCW). In addition pieces of amphorae were recovered from fill 146, and samian from fill 340 while fragments of Oxford Red Ware (OXRW) came from fills 59, 146 and 338.

There appears to be very little difference in the dating of the pottery from the upper fill (59) to that of the lowest (340). Several pieces are probably residual. The handle, in a grey hard fabric with grit inclusions and a sandy feel (No. 1), should probably fall into this category and is paralleled at Orton Hall Farm and dated to the 3rd century (Perrin 1996, fig. 98, no. 437). There are several large storage jars in both Roman shell-gritted ware (RSGW) and LNVGW that may be slightly earlier than the main body of the assemblage. The jars (Nos 2–5), all in grey ware and from fills 59, 337 and 340, may well have been made in the 3rd century. Numbers 2 and 3 have characteristic ridges on the shoulder which can be paralleled at Chesterton in the late 3rd century (Perrin 1999, fig. 51, no. 18) and No. 4, a wide mouthed jar, would fit easily into a similar date range and matches vessels from Fengate and Chesterton (Hayes 1978; Perrin 1999, fig. 57). Similarly several large jars in shell-gritted fabrics from the layers within the well are very difficult to date precisely and may be residual, however, the undercut rims on Nos 5–7 are similar to late 4th-century jars from Great

Casterton and may well date to this period (Gillam 1951, fig. 8, nos 17–20 & fig. 21, no. 21). Incised and cut decoration (No. 9) is also a common 4th-century characteristic (Perrin 1996, fig. 162, no. 486; 1999, 120) and appears in various forms on large jars of this period from Stibbington (Perrin 2008, fig. 31, no. 215), Water Newton (Perrin 1999, fig. 65, no. 274) and Orton Hall Farm (Perrin 1996, fig. 104, no 583).

Of the LNVCCW jars, almost all are from the 4th century, although 4th-century jars in general exhibit a tremendous variation in form (vessels having short, medium or tall necks and curved round or square rims) and size (from small to large and short and tall; see for example Perrin 1999, 106; Howe *et al.* 1980, fig. 7, 75–77). The jars from the well fit comfortably within the range of 4th-century vessel types and vary from having rounded rims (No. 10) to rims that are curved, slightly undercut and with a short neck (see for example Nos 11–13). The key to the late date of both the large and the small jars (Nos 14 and 15) is the colour coating which is in the typical repertoire of colours from this period – reddish browns and browns, often fired to a lustre (see Howe *et al.* 1980, fig. 7, nos 75–77). The vessels from Bretton Way can certainly be matched to those recorded from the late 4th-century deposits at the kiln site at Stibbington and may actually be Stibbington products (Perrin 2008, fig. 21, nos 76–80). The narrow mouthed jar from Bretton Way (No. 16) is identical to one from the Stibbington well deposit which is dated to the late 4th or early 5th century (Perrin 2008, fig. 29, no. 199).

The Bretton Way well also contained numbers of flanged bowls and straight or slightly curved sided, plain rimmed dishes (see Nos 17–23). Apart from No. 21, which is in a reddish brown crisply fired fabric with grit inclusions, the illustrated flanged bowls are all colour coated fabrics. Vessel No. 20 is certainly similar in fabric and form to a vessel recovered from a ‘sump’ at Lynch Farm II and dated to the late 4th century (Upex forthcoming A). The flanged colour coated bowl (see Nos 17–18 and 22) is by far the most common form of late vessels made in the Nene valley. These were produced in huge numbers and exported widely and may have been used as tureens. There is little to date precisely this form of vessel at present. The grey ware predecessors of the colour coated versions tend to be fairly shallow and have high flanged rims and this may have been the case with early forms of the colour coated versions of this form of vessel (Hartley 1960, 26, fig. 4, 16). However, as a general rule a late date appears to be linked with deeper and larger colour coated vessels. The really deep versions (see No. 17) are probably late 4th century and appear in the destruction layer deposits dated to after c. AD 375 at Great Casterton (Gillam 1951, fig. 9, no. 35). Such a date also is matched by the range of vessels from Stibbington (Perrin 2008, fig. 19).

Plain rimmed dishes (such as Nos 19–20, 23 and 24) were made from the later 2nd century onward although most are 4th century in date and there is little to distinguish any chronological differences between the vessels, other than that the earlier ones often

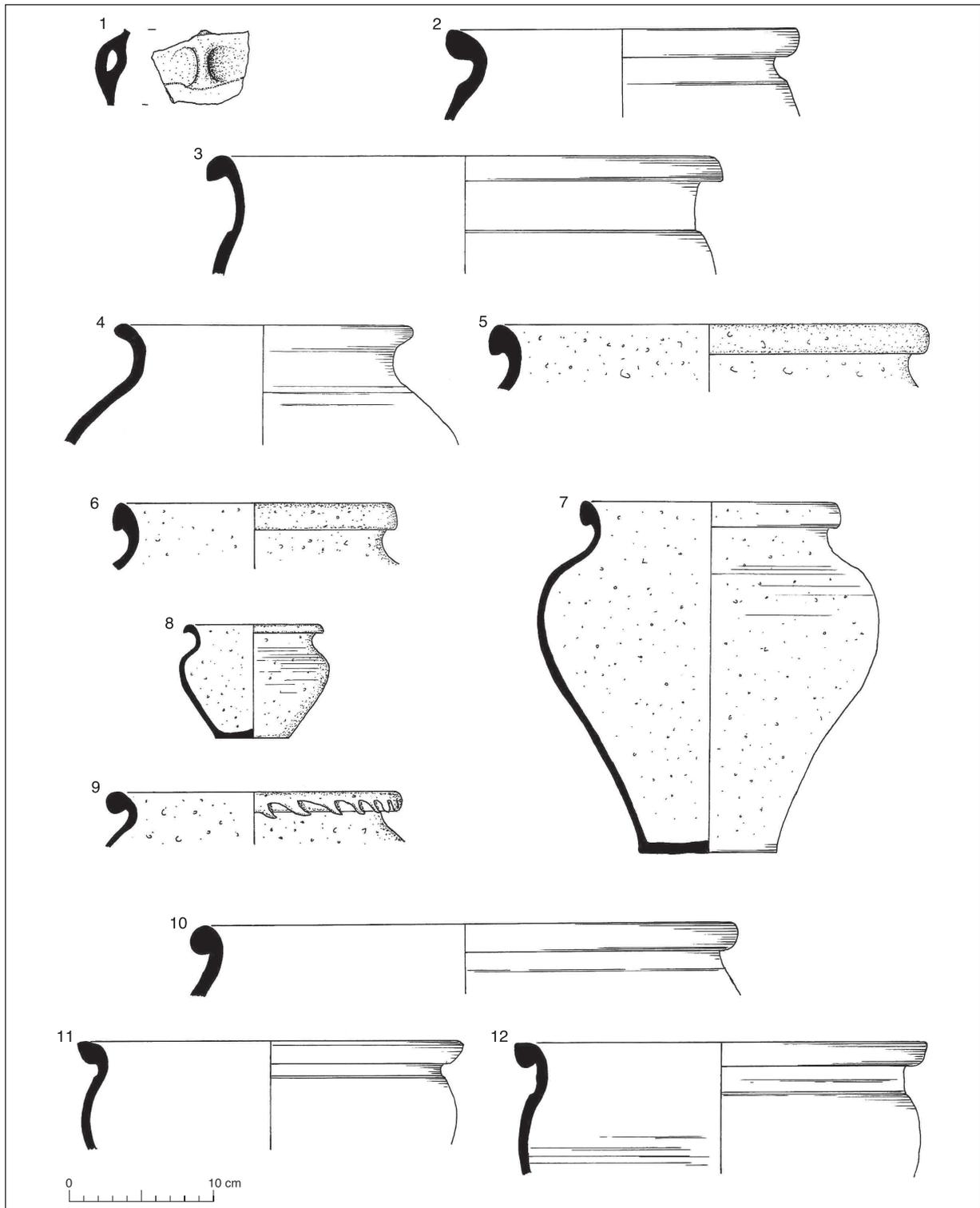


Figure 10. Pottery from the well/cistern (Nos. 1-12).

1. Grey/hard /grit inclusion /sandy feel. Handle from a jug or cup (59)
2. LNVGW. Jar. (59)
3. LNVGW. Jar (337)
4. LNVGW. Jar (340)
5. RSGW. Jar (337)
6. RSGW. Jar (337)

7. RSGW. Jar (340)
8. RSGW. Sooting to outside surface. Complete jar, unworn base (337. SF 54)
9. RSGW. Jar. Another fragment from layer 337 which is burnt. (184)
10. LNVCCW. Jar. (59)
11. LNVCCW. Jar (146)
12. LNVCCW. Jar (146)

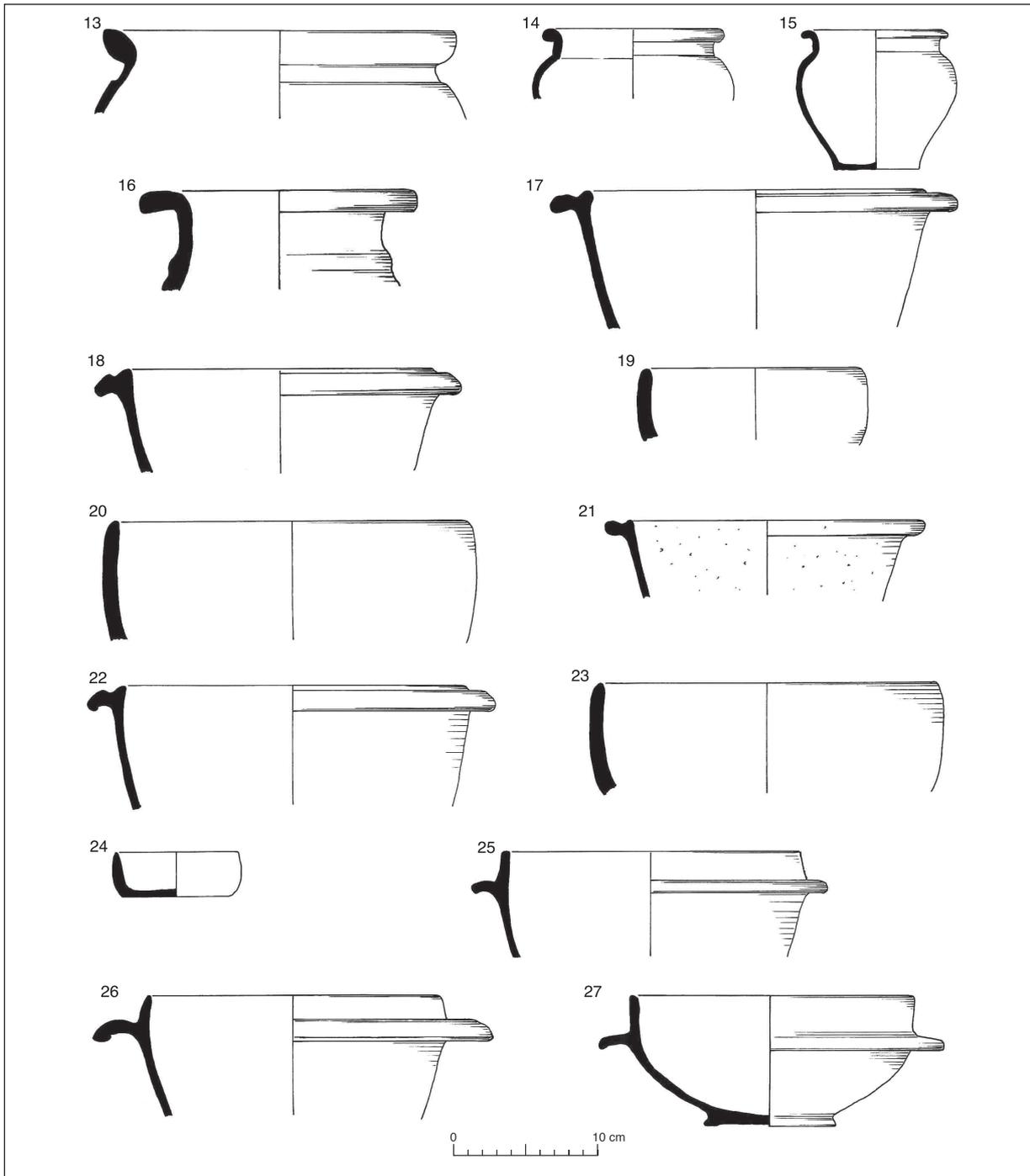


Figure 11. Pottery from the well/cistern (Nos. 13-27).

- | | |
|--|--|
| 13. LNVCCW. Jar (338) | 22. LNVCCW. Flanged bowl (337) |
| 14. LNVCCW. Jar (337) | 23. LNVCCW. Dish (337) |
| 15. LNVCCW. Near complete jar with slight external lustre, unworn base. (337. SF 53) | 24. NVCCW. Dish. Complete vessel in two halves, one found in fill 59. (183) |
| 16. LNVCCW. Narrow mouth jar (59) | 25. LNVCCW. Bowl- imitation samian form 38, with slight internal lustre (337) |
| 17. LNVCCW. Flanged bowl (59) | 26. OXRW. Bowl- imitation samian form 38 (337) |
| 18. LNVCCW. Flanged bowl (59) | 27. LNVCCW. Near complete bowl- imitation samian form 38 with very worn foot ring, (338. SF 101) |
| 19. LNVCCW. Dish (59) | |
| 20. LNVCCW. Dish (59) | |
| 21. Crisply fired with grit inclusions, reddish brown throughout. Flanged bowl (107) | |

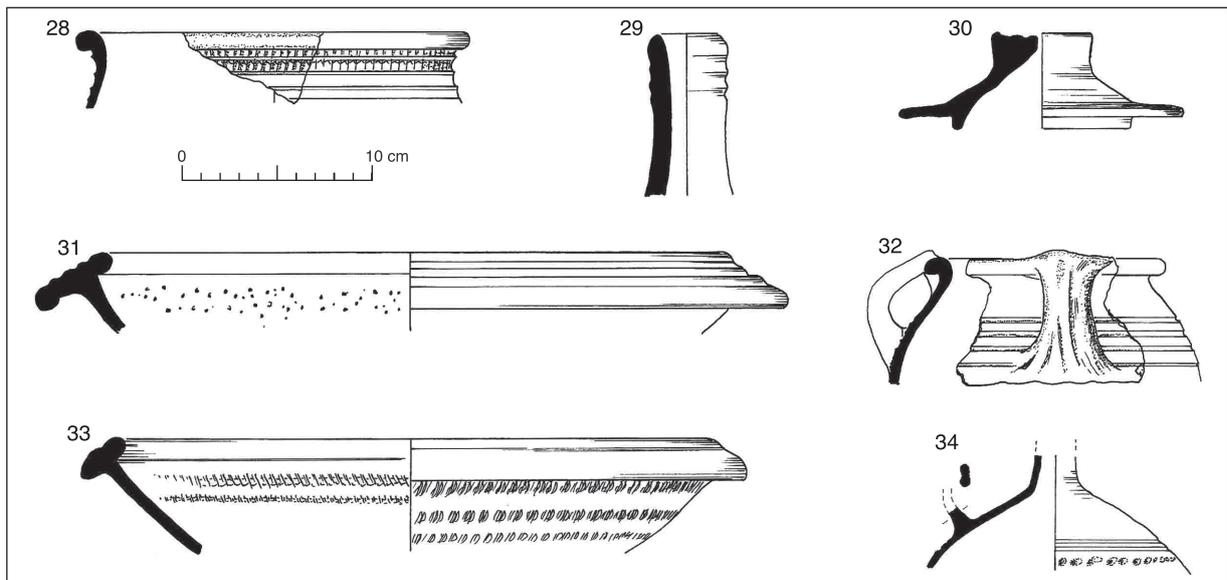


Figure 12. Pottery from the well/cistern (Nos. 28-34).

- | | |
|---|--|
| 28. OXRW. Jar (146) | 32. LNVCCW. Bowl with handle(s) (146) |
| 29. LNVCCW. Neck of a flask (59) | 33. LNVCCW. Large dish with both external rouletted decoration in three bands and internal rouletted decoration in two bands (338) |
| 30. LNVCCW. Lid with steam hole (some sooting on rim) (337) | 34. LNVCCW. Upper part of flask with white over-painted dot decoration (340) |
| 31. Hartley Fabric 1. Mortarium (337) | |

have a chamfer between the wall and the base of the vessel – also common on grey ware dishes (see for example Gurney 1985, fig. 88, no. 159; fig. 89, no. 180 and fig. 91, no. 230; Gillam 1970, nos 322–335). Thus, No. 24 is typical of the late form of vessels without any chamfer and the remaining basal sherds from the well deposits are all similar to this and date to the 4th century. All of the illustrated LNVCC vessels again have typical colour coats that match the repertoire from the Stibbington kilns and are fairly certainly dated to the late 4th or early 5th century (see Perrin 2008, fig. 21, nos 70–75, Howe *et al.* 1980, fig. 7, no. 87).

Vessel Nos 25–27 are all imitation samian form 38 which started to be produced in Nene valley kilns in the second half of the 2nd century and continued in production until the end of the pottery industry in the late 4th and early 5th century. They were being made at Stibbington at this late period and the examples illustrated (Nos 25 and 27) may well be Stibbington products with a characteristic lustre, typical of this late date in kiln firing technology (Perrin 2008, fig. 20, nos 60–63; see also Gillam 1951, fig. 9, no. 30 for a vessel from the post- *c.* AD 375 deposit at Great Casterton). An Oxford red ware jar (No. 28) came from context 146 – such vessels are typical late imports into the Nene valley.

Of the remaining illustrated colour coated vessels, the flask neck (No. 29) is similar to examples from Orton Hall Farm, Chesterton, Stibbington and Orton Longueville, all of which derive from late 4th-century contexts (Perrin 1996, fig. 101, no. 503; 1999, fig. 62, no. 191; 2008, fig. 22, no 99; Dakin 1961, fig. 7, no. 64). The

lid with what could be a steam hole (No. 30) would have been used in conjunction with narrow mouthed jars and would have fitted, for example, the lid of an illustrated jar (No. 21). The lid flange in this example is comparatively wide and it would have fitted a range of jars from 9 to 13cm wide. This form of lid is mainly of 4th-century date and appears in many of the latest deposits – at Great Casterton after *c.* AD 375, from the well deposit at Stibbington (lids with and without steam holes), and from the museum collection at Peterborough (Gillam 1951, fig. 10, nos 49–50; Perrin 2008, fig. 31, nos 208–209, Howe *et al.* 1980, fig. 6, nos 72–73). The illustrated mortarium (No. 31) is almost certainly a Stibbington product and from the late kiln site excavated in 1969 (Perrin 2008, fig. 23, nos 115–121). The rim is a common form on such late vessels and falls within the typological 4th-century grouping outlined by Hartley (1996, see for example nos M36–M46).

Vessel No. 32 is a bowl or jug with a single handle remaining but which may have had two or even three handles originally. Such vessels are very late in the production repertoire of the local potters and occur commonly with brown or reddish brown colour coats with white, cream or pinkish white fabrics. Vessels with handles seem common in late 4th-century contexts and occur as jars, bowls or large cups (see, for example, Perrin 2008, nos 183–186 and 205) and can be decorated with bands of rouletting, bosses, barbotine paint or just left plain. The Bretton Way vessel is decorated simply with four grooved bands, over which the handle has been attached. A complete vessel from

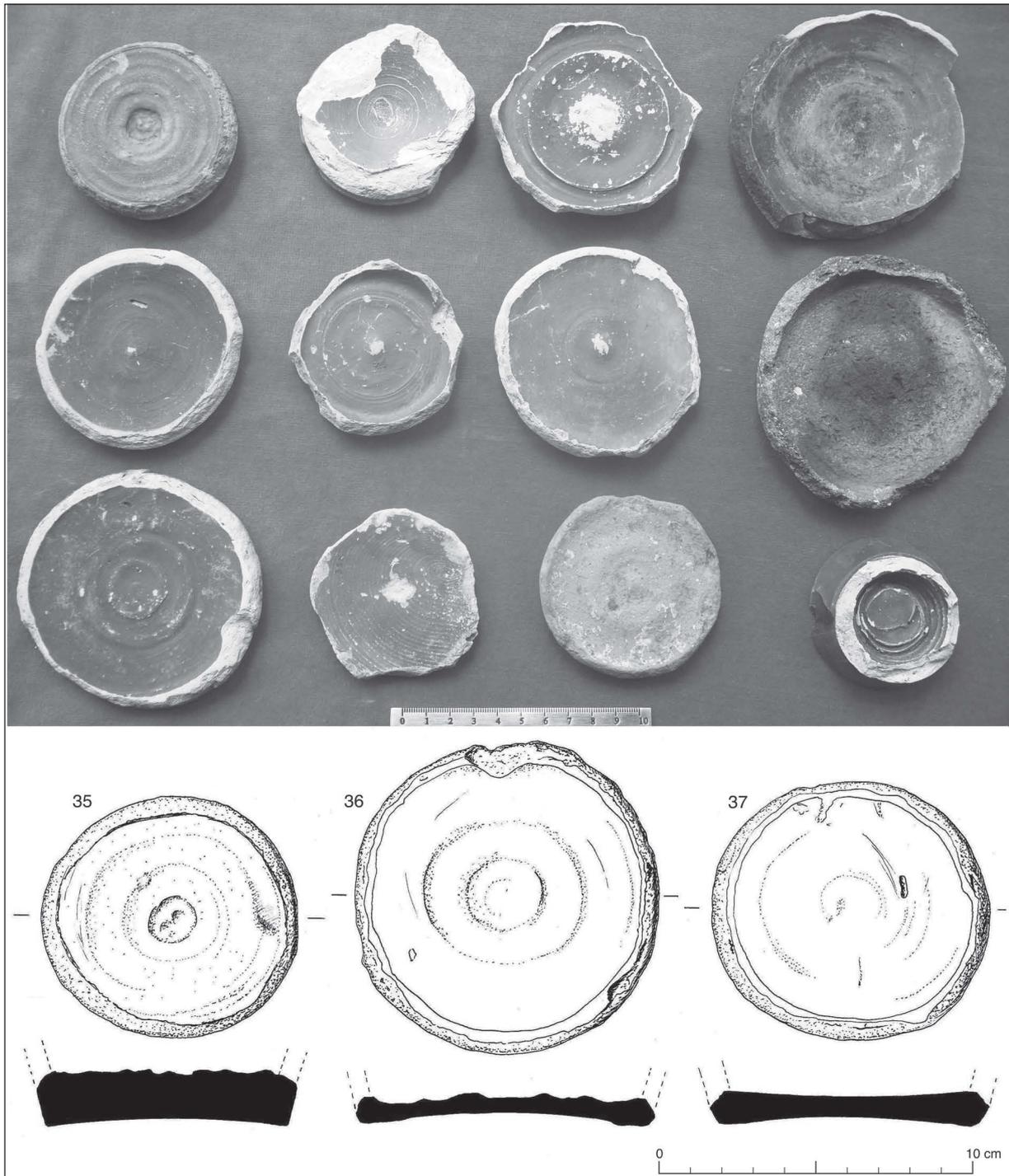


Figure 13. Pottery bases/discs from the well/cistern (Nos. 35-37). The photo shows the range and variety of pottery discs from the well. Selected examples are drawn.

35. Base formed into a disc. LNVGW. (337)

36. Base formed into a disc. LNVCCW. (337)

37. Base formed into a disc. LNVCCW. (338)

Barnwell, found in a deposit with three other complete vessels, is similar to the Bretton Way example and dates to the late 4th or early 5th century (Upex, forthcoming B), while vessels from Stibbington are all of a similar date, especially a three-handled bowl

from a well deposit (Perrin 2008, fig. 31, no. 205).

Two vessels (Nos 33 and 34) from the lower well fills (338 and 340) are also dated to the late 4th century. The wide platter (No. 33) has three rows of rouletted decoration on the exterior and two rows on the

inner surface. The rouletting wheel used is different on both these surfaces. Platters of this form and in dark brown and chocolate colour coats on a white fabric were found at the Stibbington kiln site and at Great Casterton in the deposit dated to after *c.* AD 375 (Perrin 2008, fig. 22, nos 103–6; Gillam 1951, fig. 10, nos 43–5). In both cases internal and external scored lines formed the only decoration but the style, similarity of colour coating and fabric of the vessels from these two dated sites is so similar to the Bretton Way example that they are clearly contemporary.

The shoulder of a small flagon (No. 34) from the very bottom of the well (fill 340) is one of the single-handed forms that appear to be common in the 4th century. The vessel has a dark brown exterior colour coat with a row of white/cream over painted dots below two scored lines. The rim is missing but the narrowness of the neck makes it likely that it was a disc necked vessel (see Perrin 1999, fig. 62, nos 188–9; 2008, fig. 28, no. 181) or something very similar. Flagons of this form were being produced from the 3rd century onwards but the style of decoration is so similar to later vessels that it would be sensible to see this flagon as belonging to the mid to late 4th century. A fragment of a similar colour coated vessel from Stonea (Cameron 1996, fig. 152, no. 24) has the same handle form but the decoration consists of a single line of rouletting and an over-painted curved design (see also Gillam 1970, fig. 3, no. 19). The Great Casterton ‘destruction layer’ also produced flagons of similar type dated to after *c.* 375 (Gillam 1951, fig. 8, no. 1) while the range and variation of design and decoration from Stibbington, including late 4th- and early 5th-century examples from the well, now push the production of this type of vessel to the end of Roman commercial production in the Nene valley (Perrin 2008, fig. 28).

Of particular interest in the ceramic assemblage from the Bretton Way well is a series of 24 pottery bases (Table 3), formed from jars, bowls and beakers, which can be classified into three groups. Firstly,

those bases which are very rough and appear simply to be the broken bases of pottery vessels (x 9). Secondly, a series of twelve bases (Fig. 13) which appear to have been partly chipped or trimmed, to remove some of the wall part of the vessel. Lastly, there are three examples which show evidence of being deliberately worked by having the junction between the base and the wall of the vessel trimmed down to form a chamfer (Nos 35–37). This trimming would appear to have involved two processes. First the chipping away from the base of the remaining wall part of the vessel and then the rubbing of the inside of the base onto some form of abrasive surface (which occurred on sherd Nos 35–37). This produced a narrow, smooth, flat surface on the inner side of the base.

The fabrics of the relevant vessels vary with single examples in a crisply fired reddish brown fabric, Roman Shell Gritted Ware and Lower Nene Valley Grey Ware. The remaining examples are all in lower Nene valley colour coated wares. The diameters of the bases vary from 46mm (cut down from a beaker?) up to 125mm which was cut from the base of a large Roman shell gritted jar – the average diameter was 78mm. The possible function(s) of these objects is of some interest and debate and is fully discussed below.

Leather Shoes (Plate 2, Fig. 14) Quita Mould

Roman leather was recovered from four of the lower well fills (337, 338, 339, 340), which together produced more than forty-six fragments of footwear. More than three quarters of the assemblage consists of small pieces broken from shoes made of multiple components and it is difficult to be certain how many shoes are represented by the fragments recovered. Consideration of the individual components from each context suggests that at least fourteen shoes and potentially as many as sixteen were present. All the leather came from footwear, no waste leather from

Table 3. *The pottery discs and vessel bases from the well/cistern.*

LNVCW = Lower Nene Valley Colour Coated ware; RSGW = Roman Shell-Gritted ware

Context	Total No. of Bases	Fabrics	Rough Base	Part-Chipped Bases	Chipped and Smoothed Bases
59	2	1 = Crisply fired with grit inclusions, reddish brown throughout. 1 = LNVCW	1	1	
146	1	1 = LNVCW	1		
183	1	1 = LNVCW	1		
324	2	2 = LNVCW	2		
327	2	2 = LNVCW	1	1	
337	9	7 = LNVCW 1 = RSGW 1 = LNVCW		8	1
338	5	5 = LNVCW	1	2	2
339	1	1 = LNVCW	1		
340	1	1 = LNVCW	1		
Totals	24		9	12	3

the manufacture or repair of shoes or other leather goods being found. Shoes for both the left and the right foot are present, although the group contains more left footed shoes than right (of the shoes sufficiently complete for the foot to be determined 6 are left, 1 possibly left, and 2 are right) and sizes to fit adult, small adult/adolescent and children are represented. At least one shoe had the upper cut from the shoe bottom before it had been thrown away. It would be anticipated that the footwear from the lower fills would be in better condition than that from the upper fills; but this was not the case. The material from the lowest fill (340) was badly broken, with the better preserved examples occurring higher up the sequence in fill 338.

One nailed and stitched shoe (Plate 2, Fig. 14, SF 60) from this particular fill survives in good condition, with much of its upper preserved. It has a line of tunnel stitching running from the broken throat area down toward the toe marking the former position of a row of decorative stitching. The shoe is of Portchester-J style dated to the last quarter of the 3rd and first half of the 4th centuries (Volken 2012, 126 and 122, fig. 105). To date, other examples of this shoe style that have been recovered have lacked any indication of a method of fastening and sadly this is also the case with the Bretton Way shoe. Once rather a rarity, a growing number of shoes of this style have been recorded from this country including an example from a basal fill of a Roman well at the Tower Works, Peterborough (Mould 2005). The Bretton Way shoe appears to have decorative tooling, darkened lines made by impressing a heated iron tool known as a creaser, that take the form of slightly diverging lines on the back part (heel area) of the upper; a feature that also decorates the toe area of the shoe from the Tower Works. The shoe style appears to have been widely worn being found on rural sites in Bedfordshire, Buckinghamshire, Northamptonshire and Lincolnshire as well as London, Portchester in Hampshire (Ambrose 1975, 250–1, fig. 133, no. 267), Ickham in Kent (Mould 2010, 210, no. 520) and Skeldergate, York (MacGregor 1978, 31, fig. 28 no. 353).

As a whole, the group contains a notably high proportion of nailed and stitched shoes (ten of the 14/16 shoes represented). Of the 328 nailed shoes from Drapers' Gardens in the City of London, for example, only five nailed and stitched examples were recognised, all coming from deposits dating to the first half of the 2nd century, although 3rd- and 4th-century footwear was present in the assemblage, albeit not well represented (Mould 2012). One might speculate on the relatively high number apparent at Bretton Way: it is conceivable that the nailed and stitched construction was more favoured in the provinces than the city or that it might be a feature period specific to the 4th century. Questions of this nature may only be addressed by the recovery of large, well-dated groups (closely dated to the 4th century) particularly from rural settlements, something that appears to have been lacking thus far.



Figure 14. *Leather shoe from the well/cistern.*
See also Plate 2.

SF 60. Leather shoe of nailed and stitched construction, left foot, small adult/adolescent size. Near complete shoe with closed upper of one-piece construction joining with a single side seam; bottom unit and upper attached so some details obscured. Sole with oval toe and natural tread tapering slightly to a wide seat, no distinct waist. A line of widely-spaced nailing around the edge with a single nail at the centre of the seat, none present at the waist or tread, nailing type 1 variant. Tacking thong running parallel to the edge between the nailing exposed where the grain side is heavily worn. Insole has a row of constructional thonging running down the centre from waist to seat (tread area cannot be seen because of the upper) type 1. The upper has a single overlapping side seam on the right side with a vertical line of paired large stitch holes; a broken piece from the same seam has the widely-spaced tacking thong 4mm present. Much of the top edge and the throat area is broken. A row of decorative tunnel stitching runs vertically from throat to toe, the paired stitches 3mm apart. There are also decorative, radiating crease lines (linear tooling) present on a fragment of upper. Remains of a heel stiffener present at centre back, surviving height of upper at centre back 53mm. Upper leather bovine 2.56mm thick. Estimated size Adult 1(33). Sole length 240mm, insole can be no longer than 220mm, insole width at tread 75mm (estimated), waist 60mm, seat 50mm. (338), lower fill of well 60.

Bone Sledge Runners (Fig. 15)
Nina Crummy

The two bone sledge runners from fills 338 and 183 can be distinguished from the very similar skates by having vertical rather than horizontal holes for the attachment straps (MacGregor 1985, 144). The complete example from Bretton Way (SF 72) is made from a horse radius and shows less wear than the fragment (SF 87), which has the longitudinal scratch marks on its underside that typify use on ice. In Britain, bone sledge runners and skates usually come from Late Saxon and early medieval contexts, with perhaps the

earliest introductions being Middle Saxon, and there are substantial groups of skates from sites such as Thetford, London and York (MacGregor 1985, 141–6; Rogerson and Dallas 1984, 179, figs 195–6; MacGregor 1976, 65; MacGregor *et al.* 1999). The Bretton Way runners are therefore the earliest stratified examples of these objects from Britain, pushing the date of their use here back by several hundred years. Were it not for the recovery of other Roman period finds from the well, this would inevitably cast doubt on the validity of the dating of the backfill, much as a horse bone skate found in late 4th-century dump in London has previously been assumed to be medieval and

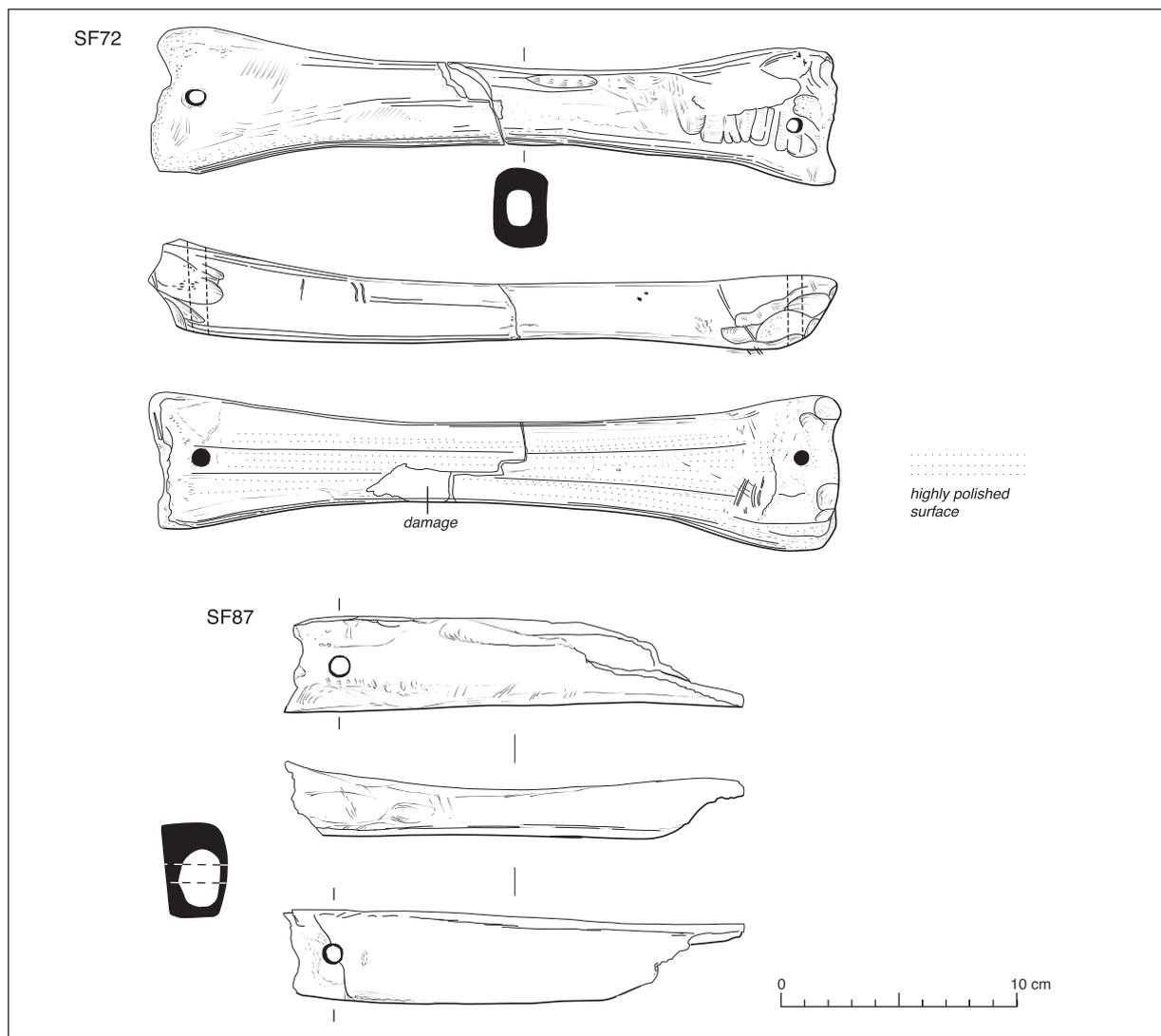


Figure 15. Bone sledge runners from the well/cistern.

SF 72. Sledge runner made from a horse radius. The proximal articulation has been cut down to form a blunt end, the distal articulation (unfused) shows only slight cut marks. A hole has been drilled through each end. The ulna has been trimmed off but left rough and that side of the bone (the upper face in use) is little worn. The flat central area of the underside, in contrast, is highly polished but has few of the longitudinal scratch marks seen on well-used runners and on bone skates. The curved sides are also polished, though less markedly so. Length 290 mm. (183), lower fill of well 60.

SF 87. Fragment of a sledge runner as SF 72 above. The upper face is well worn and slightly polished. The underside is very highly polished on all surfaces and has many scratch marks along its length. Both ends are broken, one close to the attachment hole. Length 193 mm. (338), lower fill of well 60.

intrusive (Cardiff 2006, 11). However, both runners and skates were used in the prehistoric period on the continent, and there are many skates from Roman period contexts in Germany, Austria and Hungary (Barthel 1969, 211–12, 222–4; MacGregor 1985, 145; Choyke 1996, 307–19; Kunst 2002, 263–269; Groh and Sedlmayer 2006, 909). Set against the continental evidence, a Late Roman date for the Bretton Way runners and the London skate is assured. Such an early introduction date for these objects can be seen as an aspect of the increasing northern continental influence on the material culture of Britain in the Late Roman period, and that both sites lie in eastern England accords with the influxes, both official and uninvited, of northern European troops and other settlers to this area.

Folded Bark Objects (Fig. 16)
Caroline Cartwright

Three small folded wooden objects from fill 338 have been identified as birch bark (Fig. 16). This material can be detached relatively easily from the tree in spring or early summer by slitting the bark lengthwise and pulling it away from the trunk or branches of the tree. The resultant bark, which should be spread open and kept pressed flat during storage to prevent it rolling up, is strong and water-resistant and can readily be bent, cut, sewn or perforated. In order to create sharp folds or bends in fresh birch bark, the material should be scored with a blunt stylus. Dried or stored birch bark may be steamed or water-soaked to soften it before modification. The fungicidal properties within birch bark may help preserve the artefact itself as well as its contents. No evidence for stitching or pegging could be detected microscopically in the items from Bretton Way, and, coupled with their very fragmentary nature, it cannot be established conclusively whether these folded birch bark artefacts are to be classified as containers, vessels or votive objects. However their small size argues against a type of vessel or container, making votive deposition the most likely interpretation. They may perhaps once have held written 'curses', no traces of which remain: further discussion on this issue is given below.

Animal Bone (Fig. 17)
Chris Faine

The substantial faunal assemblage from the well (55.383kg) is dominated by cattle (237 bone fragments). At least thirteen individuals are represented in the form of two articulated skeletons, eleven partial crania and a number of horncores. There is preponderance (68.4%) of left hand sided elements, although interestingly there is little evidence of butchery on the complete skeletons or disarticulated material. Some 80% of elements are from adult animals, i.e. over 2 years of age, with two instances of juvenile crania. Eleven ageable mandibles were recovered, suggesting that animals were killed once physically mature. Although a small sample, morphological analysis of

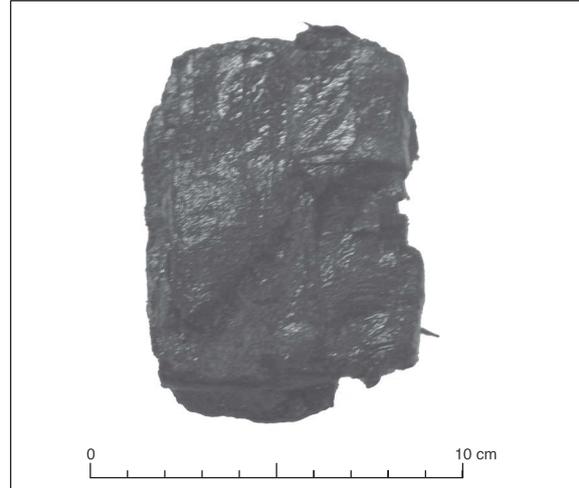


Figure 16. One of the folded birch bark objects.

the horncores suggests a largely male population with three females and one possible castrate. A number of the horncores are grooved, a condition also noted in cattle at nearby Haddon Lodge (Baxter 2003) but not seen elsewhere in the area. Withers heights were available from 17 elements with an average of 1.19m.

Several elements recovered from the assemblage show evidence of bone working, with a scapula and mandible having had square sections cut from the blade and ramus respectively. A cattle skull from context 337 shows a series of eight holes drilled down the length of the parietal suture (Fig. 17), with several smaller groups of drilled holes on the parietal bones themselves. Whilst this has been interpreted as an attempt to weaken the suture prior to splitting, the presence of the other holes on the cranium suggest it may represent a 'trial piece' of some kind. At the time of writing, no comparable examples of such marks have been found.

A naturally shed red deer antler burr was also recovered from fill 337: all of its tines had been sawn off. Five dog bones from the same fill comprise fragmentary humeri, inornate and partial crania. Although no measurements were possible, one skull comes from a relatively large animal, most probably male due to the size of the sagittal crest.

Whilst it is tempting to consider the material from the well and the surrounding features separately, species/body part distribution and ageing data all show close similarities with each other (aside from the large number of crania from the well). Although the material from the latter is no doubt a separate episode of deposition, there is no evidence to suggest that animals were particularity selected or culled for the purpose, being instead drawn from livestock already present in the settlement. Further discussion on the well assemblage appears below.



Figure 17. Cattle skull from well/cistern fill 337, showing the holes drilled along the parietal suture.

Plant Macrofossils

Rachel Fosberry

The charred plant assemblage from the well consists of cereal grains of wheat and barley and chaff items including barley rachis fragments, glume bases and rachis fragments of spelt and emmer wheat and occasional indeterminate awn fragments. The charred remains were dispersed throughout the well deposits, being slightly more abundant in the top fill (107). Charcoal was present in the three of the upper fills (107, 146 and 183). The waterlogged plant remains recovered from the samples represent a number of species from a variety of habitats of which disturbed/waste ground and grassy places are the most common, particularly in the lower fills.

Only a few of the plant species represented at Bretton Way are usually found in crop fields on cultivated land. Notably these include corncockle (*Agrostemma githago*), thought to be a Roman introduction (Godwin 1984), Bromes (*Bromus* sp.) and stinking mayweed (*Anthemis cotula*), a plant that grows on clay soils and became more common during the Roman period when improved cultivation techniques allowed agricultural expansion onto marginal soils.

By far the most numerous and diverse group of plant remains recovered indicate ground that had been disturbed by human activity or left to waste. Seeds of nettles of both the stinging and small nettle variety (*Urtica dioica*, *U. urens*) occurred in large numbers in all of the well fills other than the top one and were particularly abundant in the lower fills. Nettles produce enormous quantities of seeds but they must have been growing close to the well or were otherwise deliberately placed into it. Abundant seeds of knotgrass (*Polygonum aviculare*) were also present in the lower fills of the well. This is a scrambling plant that rapidly colonises open ground. Other

plants of open disturbed ground that were recovered include Orache (*Atriplex prostrata/patula*), Goosefoot (*Chenopodium* spp.), henbane (*Hyoscyamus niger*), thistles (*Carduus/Cirsium* sp.) and mallows (*Malva* sp.) together with grasses (Poaceae). Many of the seeds recovered represent plants that have more diverse habitats and can be found on arable or waste ground, such as field penny cress (*Thlaspi arvense*), black-bindweed (*Fallopia convolvulus*), poppy (*Papaver* sp.), fumitory (*Fumaria officinalis*), docks (*Rumex* sp.), parsely-piert (*Aphanes arvensis*), dead nettles (*Lamium* sp.) and chickweed (*Stellaria media*).

Several plants that grow in grassland communities were represented and may suggest local pasture. They include fairy flax (*Linum catharticum*), agrimony (*Agrimonia eupatoria*), hawkbit (*Leontodon* sp.), ox-eye daisy (*Leucanthemum vulgare*), self-heal (*Prunella vulgaris*), meadow buttercup (*Ranunculus* cf. *Repens*) and grasses. Again, there are several plant species that overlap with other habitats such as greater plantain (*Plantago major*), red bartsia (*Odontites vernus*) and sainfoin (*Onobrychis viciifolia*).

A number of the plants present grow in wet/damp soils and are commonly found near ponds and rivers. These include bitter-sweet (*Solanum dulcamara*), meadow-rue (*Thalictrum flavum*), rushes (*Juncus* sp.), gypsywort (*Lycopus europaeus*), sedges (*Carex* sp.), spike-rush (*Eleocharis palustris*), Great fen sedge (*Cladium mariscus*), yellow flag (*Iris pseudacorus*) and hemlock (*Conium maculatum*). A number of these species were found as charred specimens in the upper fills of the well. It is possible that they were growing on the margins of wet fields and were harvested with a cereal crop. Alternatively they may have originated from burnt flooring, fuel or thatch material.

Comparisons with contemporary sites in the area, such as *Durobrivae*, Castor, and Orton Hall Farm, is limited as environmental sampling was not per-

formed when these sites were excavated. Generally, Roman wells tend to fill naturally and the preserved macrofossils often represent damp, overgrown scrub communities consistent with abandonment.

Pollen

Steve Boreham

Basal fills of the well were sampled for pollen (fills 340, 339 and 338). The sample from fill 340 contains significant quantities of pollen (113,584 grains per ml), whilst the remaining samples are almost barren. Preservation of the fossil pollen grains (palynomorphs) is in general quite good, even in the sparse samples.

Pollen from fill 340 is dominated by grass (Poaceae) pollen (32.1%), with a wide range of herbs including members of the cabbage family (Brassicaceae) (4.9%), meadowsweet (*Filipendula*) (4.9%), dock (*Rumex*) (5.6%), the disturbed ground indicator ribwort plantain (*Plantago lanceolata*) (7.4%), and cereal pollen (7.4%). Arboreal taxa include alder (*Alnus*) (1.9%), birch (*Betula*) (3.1%), ash (*Fraxinus*) (1.2%), and hazel (*Corylus*) (2.5%). Fern spores together account for 7.4%, and obligate aquatic plants are represented by the fringing emergent bur-reed (*Sparganium*) (0.6%). This pollen assemblage has a diverse selection of herb taxa typical of grassland, damp meadows (tall herb) and riparian (bank-side) habitats. However, there is also a strong signal of arable activity, with abundant cereal pollen and indicators of disturbed ground. There is also a faint signal from birch and hazel scrub, and this is an ostensibly treeless environment with apparently very little local wetland.

Discussion

The Settlement

The small Iron Age settlement was abandoned in the 1st century AD and a Roman field system developed that continued until the late 3rd century. Similar shifts in settlement location have been observed at Werrington (Mackreth 1988) and Orton Longueville, Monument 97 (Mackreth 2001), where they were interpreted as marking a change from a mixed economy to animal husbandry. This occurrence is matched by the expansion of a number of new settlements in the area in the latter half of the 1st century AD (e.g. Orton Hall Farm; Mackreth 1996). A possible decline in settlement in the 2nd to early 3rd centuries has been noted at sites including Longthorpe Farm, Werrington and Maxey, possibly because of the expanding enclosure systems at the expense of reduced settlement. The construction of the aisled barn at Bretton Way accords with the general local pattern, similar barns being constructed at Longthorpe Farm and Orton Hall Farm. This may indicate increased prosperity in the early 3rd century AD.

Had the Bretton Way finds and environmental

assemblage not included the items from the well, it would have conformed to the general pattern of deposition on rural sites in eastern England – 'rural' in the strict sense of working farms or hamlets but not including villas. The numbers of small finds from such sites are low despite long and unbroken occupation. Ironwork predominates, particularly tools and structural fittings, and there tends to be an absence of the mass-produced copper alloy and bone objects typical of urban occupation, most notably female-gendered dress accessories, toilet instruments, household and recreational equipment and other small personalia. These characteristics give an overall picture of subsistence economy and a lack of engagement with the conspicuous consumption of material culture seen in towns (Crummy 2012, 109–10, fig. 7.3).

Faunal remains from the early phases of activity are typical of the period. The preponderance of cattle is well documented in the area, with similar species distribution being seen in Roman phases from Haddon Lodge (Baxter 2003), Orton Hall Farm (King 1996) and Barnack (Harman 1993). A mixed economy was probably practiced, with meat being the primary product and with older animals kept for traction. Secondary carcass processing appears to have been carried out elsewhere. Cattle are of similar size to those from the other sites mentioned above. Sheep/goat were primarily kept for meat with some evidence of breeding being observed, as is the case with pigs. Amongst the horses, the one measurable individual was at the top end of size ranges from other nearby sites (Baxter 2003).

The environmental evidence points to a change in use of the site with more evidence of crop processing activities occurring in the later Roman period, possibly in relation to the aisled barn. Comparison of the waterlogged plant remains from the waterhole and well may suggest a change in environment, with the appearance of scrub vegetation and plants of wasteland occurring in the later Roman period: these suggest that the site was becoming overgrown and unkempt.

The Well and its Contents

Constructional Parallels and the Source of the Stones (Fig. 18)

Parallels for the Bretton Way well are few and far between. A rectangular stone well dedicated to Coventina was excavated in 1876 near Carrawburgh Fort on Hadrian's Wall. This measured 2.6m by 2.4m and lay in a walled enclosure or temple located on the source of a local spring. A contemporary water-colour by F. Mossman (Fig. 18) shows it to have been constructed of large stone blocks of varying size but it is not possible from the information depicted in the painting to establish whether they were re-used. In this instance there was no doubting the attribution of the well, since there were no less than twelve inscriptions to Coventina, a little known but probably Celtic goddess (Allason-Jones and Mackay 1985). At least 13,487 coins dating between Mark Antony and



Figure 18. *Coventina's Well, excavated in 1876 near Carrawburgh Fort on Hadrian's Wall (watercolour by F. Mossman; from Clayton 1880, plate 1).*

Gratian were deposited into the feature.

Further afield, there are similarities between the Bretton Way well and a feature described by Furger at Augusta Raurica in Switzerland as a votive cistern or well (Furger 1997, 143–184). Of a similar size to Bretton Way, the stones employed here were clearly re-used, given the various markings on them, but this feature has no known attribution.

The original source and function of the monumental stones that were used to line the Bretton Way well remain elusive. Although the blocks were neatly fitted together, the lack of uniformity of shape makes it clear that they were not cut and shaped to fit together. As has already been discussed, the well was constructed in such a way as to work with the shape of the blocks in what must have been something of a jigsaw puzzle. Many of the blocks also retain shaping and detailing that bears no relevance to their use in the pit, reflecting their previous function. Unfortunately, the stones do not have architectural details that could indicate their original function.

The size of the larger blocks clearly indicates that they were previously used in a massive piece of architecture and were probably brought to the site from a relatively local source, given the difficulty in moving them. It seems very unlikely that those constructing or expanding a rural villa building (such as that recently found at Itter Crescent) would have gone to the lengths required to lift such heavy pieces, or indeed to source large stones at all (Blagg 1990, 38). It was, however, clearly within the capabilities of the more wealthy Roman citizens to transfer stone some distance, even early in the period: building and archi-

tectural stone used at Fishbourne for example, was imported from various parts of the country such as Dorset and the Weald as well as from the continent (Blagg 1990, 35).

Given that the secondary use of the blocks in the well appears to date to the late 3rd to early 4th century, the structure from which they came must have been dismantled before the late 3rd century. One obvious potential source is the substantial complex of buildings at Castor, approximately 5km to the west. The largest of Castor's 'palatial' buildings were of 4th-century date (Green *et al.* 1987). The stones may therefore hint at the dismantling or alteration of an earlier massive building or structure at Castor. Alternatively, such blocks may have been surplus to requirements at the end of a major construction phase. Another possible source for the blocks is the town of *Durobrivae*, 1km to the south-west. Here, a monumental temple or other public building could have provided stonework of the appropriate scale.

Finds and Environmental Evidence

Turning to the contents of the well, the ritual deposition of objects in watery or waterlogged contexts, or on land adjacent to a spring or river, is well attested in Britain and Gaul in the Roman period, but the practice had its origins in European prehistory (Green 1997, 138–45). The deposits might be overtly ritual in nature, such as curse tablets, or they might be small everyday items of personal equipment, such as dress accessories. Such items were offered for a variety of reasons, perhaps as requests for healing, for help overcoming other personal difficulties, or as offerings

to ensure that wells or springs did not run dry. They can sometimes be linked to a particular local deity, as with Coventina at her well in Northumberland, Sulis Minerva at the Sacred Spring in Bath, and Senuna (represented as Minerva) at the River Rhee near Ashwell in Hertfordshire (Allason-Jones and McKay 1985; Cunliffe 1988; Jackson and Burleigh 2007).

Taken as a whole, the material from the Bretton Way well reflects the important role that water played in religious life of the period. Many of the objects from its fills fall into recognised categories of ritual deposition: complete pots, animal skulls, the amulet and dress accessories. However, other objects had more unusual aspects that merit further discussion, including perhaps the earliest bone sledge runners found in this country. Since the Bretton Way sledge runners are unparalleled in Late Roman Britain, there are no contemporary votive deposits of these objects that can inform their interpretation as either ritual deposits or rubbish, but as objects that allow transport over frozen water they can be seen as connected both to the well and to the shoes found within it. Moreover, as they provided a means of overcoming the power of both water and weather, it may have been considered necessary to placate the local deity or deities concerned.

Found at the base of the well, it appears that the amulet was an early deposit, perhaps associated with a rite of opening for the well, or perhaps introduced a little later as part of a cycle of ritual offerings. This latter is suggested by the recovery of footwear throughout the lower fill, but as archaeological leather only survives in wet contexts, and given that votive artefacts need not be overtly religious in form or function, distinguishing between shoes as ritual deposits and those discarded as rubbish depends upon other contextual associations (van Driel-Murray 1999, 136–7; Wilmott 1991, 61–7; Merrifield 1995; Crummy 2006, 62–6; Merrifield and Hall 2008).

The pendant is of an unusual form and is made from at least one material (iron) known to have been credited with special properties (Pliny, *Hist. Nat.* 34.44–5). The organic matter wrapped so prominently around the iron would no doubt also have been regarded as powerful and the use of more than one material would have enhanced the pendant's amuletic properties (Crummy 2010, 66–7). It may also fall within Pauli's noise-making group and that of objects of meaningful shape, although in the amulet's present condition neither can be verified. The amulet has no close parallel, but it can best be compared to pendants of various forms found in Anglo-Saxon burials, in particular to an oval wooden object, perhaps an oak-gall or piece of oak bark, that had been pierced by an iron point and enclosed in a pendant cage made from two copper-alloy strips found in a woman's grave at Little Wilbraham, Cambridgeshire (Lethbridge 1931, 73, fig. 39, 3; Meaney 1981, 61, fig. II.t). Two pendants from adult female graves at Welbeck Hill, Lincolnshire, consisted of a coiled wooden strip enclosed in a pendant cage of silver strips, and a third wooden coil from Fonaby in the same county was

probably enclosed in a copper-alloy cage (*ibid.*, 59, 61, fig. II.s).

The bucket hoop, and probably also the eyelet, represent the practical aspect of raising water and their recovery from higher up in the fill than the pendant allows a period of time for the bucket to be in use before the hoop fell off. It may have broken during use, but equally it may be an expression of the ritual deposition of a water container noted in wells elsewhere (Fulford 2001). Western European finds of whole or partial foot-handle jugs, for example, are concentrated in rivers, wells or springs in or near sanctuary sites rather than in midden waste or other concentrations of domestic rubbish, with one of the four British examples coming from Hauxton Mill on the River Granta, the handle of another from a well at Silchester, and the other two from features close to temples (Crummy 2011, 114–15, with references).

Another unusual aspect of the assemblage from the well is a substantial group of pottery discs made from the bases of vessels. Pottery bases do separate and survive intact from the walls of vessels fairly frequently – the base often being made of thicker material than the walls of the vessels. It is common to find such bases on Roman sites but they rarely, if ever, appear within the archaeological literature and thus there is little detail on which to form any comment regarding the quantification of such finds. However, the fact that twelve of the bases from Bretton Way appeared to have been partly chipped to remove the former side wall of the vessel and that – perhaps more significantly – three of the bases from the well had been trimmed and had the rough edges smoothed by abrasion, signifies that they were being used for a specific purpose, rather than just forming part of a rubbish deposit.

The large number of pottery bases found in the well (24 in total) could suggest that they were linked with some form of ritual practice, especially as the feature must always have held water, having been deliberately constructed for this purpose. The image of the circle, which has been associated in the past with the perceived image of the sun, may have been linked with some form of veneration (Green 1991, chap. 3). Springs and water were significant to the Roman mind and a great range of offerings have been recorded which were made to water deities (Green 1991, 109–110; Ross 1992, 245–8, see also Henig, 1989, 219–234). However, it is difficult to see from the surviving evidence how any direct links could be made between the pottery bases, the well and with any form of known religious practice. The dating is also perhaps significant as the pottery from the well suggests a date when Christianity was widespread throughout Roman Britain and certainly dominant within the local area (Thomas 1993, 113–121).

An obvious and alternative view is to view the discs as purely functional and to interpret them as the lids for other pottery vessels and used perhaps during cooking or for covering jars and bowls which contained foodstuffs or liquids. Ceramic lids are known from most local sites throughout the Roman

period where they were wheel turned and produced in a variety of fabrics, including shell-tempered, grey and colour coated wares (see Dannell and Wild 1987, fig. 45, nos 117a–f; Rollo and Wild 2001, fig. 38, no. 107; Perrin 1999, fig. 62, nos 214–5 & 69, nos 420–22; Perrin 2008, fig. 31, nos 208–9). Other lids could also have been of wood and formed from the discs of pottery from the bases of broken vessels. The use of pottery discs fabricated from broken vessels is poorly understood and confined largely to studies from Rome and North Africa, where quantities of discs have been recovered and were used as stoppers and lids. Most of these discs were cut down from amphorae but from some pottery disc assemblages 36% of their total numbers were taken from coarse ware vessels. The size range of these discs varies from 19mm–160mm and their identifiable uses were largely as stoppers for sealing amphorae but they were also used as lids for other vessels. Most of the examples recorded within the literature have irregular edges, indicating that they had been simply chipped or trimmed. However, a small number were further ‘finished’ and had smoothed edges suggesting that they had been additionally worked by some form of rubbing or abrasion (Peña 2007, 154–157).

At Kempston, Church End in Bedfordshire excavations recovered a late 2nd- or more probably early 3rd-century pit group consisting of several samian bases which appeared to have been cut down and showed evidence of re-working for use as either lids, palettes or in one case a spinning top. The walls of these samian vessels were chipped off at the junctions with the bases and the break rubbed down to a smooth edge (Felicity Wild, pers. comm.). Thus the best explanation at present for the assemblage of bases from the Bretton Way site is that some were used as lids or covers and would have been used in conjunction with jars or bowls. Most of the nine rough, untrimmed bases must also simply represent part of a ‘normal’ rubbish deposit which was discarded as part of the infilling of the well – several bases had parts of their vessel walls within the same deposit. Such discs are often classed as rough-outs for counters and in Gaul concentrations of counters have been noted on sanctuary sites and in urban workshop zones, raising the possibility that they were produced as a secondary product by artisans who sold them to worshippers for use as votive offerings (Tuffreau-Libre 1994, 128–37; Chardon-Picault 2004, 335–7). An alternative interpretation for the Bretton Way discs is that they were connected to tallying grain or other foodstuffs stored in the aisled barn, as a relief from Trier shows a man moving discs on a tray and has been interpreted as depicting the use of counters on a reckoning board (Chardon-Picault 2004, figs 15–16).

Also worthy of comment is the fact that three near complete vessels were found within the well fills. One of these (No. 27, from fill 338) appears to have been a primary/foundation deposit; it was placed in a void in the well lining, perhaps at a point of water entry, meaning that the flow of water would have gushed over it. This vessel has a heavily worn foot

ring and wear on the inside where the colour coat has been worn away by use. In contrast, the two other vessels (Nos 8 and 15, both from fill 337) have unworn bases and had clearly seen little or no use. The deposition of complete vessels into pits and wells is extensively represented within the archaeological literature where their significance as votive deposits has been highlighted (Fulford 2001, 202; Black 2008, 2). However, apart from the small complete shell gritted jar (No. 8) it is difficult to say if the other two near complete vessels were intact when deposition took place. In fact, the small colour coated jar (No. 15) has part of its rim missing, appears to be partly cracked and may be a waster or more probably a ‘second’; while the imitation form 38 bowl (No. 27) appears to have partial burn or scorch marks across some of its breaks and thus appears to have been broken prior to deposition. Whether such defects would have altered the significance of any ‘ritual aspect’ if the vessels were ritually deposited is debatable (such vessels were commonly used in Early Roman cremation burials, for example: Lyons in press). It may also be the case that the vessels were thrown away because they were already part broken or defective.

The unusual folded birch bark objects remain a conundrum. If they were made of lead, it would immediately be assumed that they were ‘curses’ or requests for healing, but if they had been written on, the evidence has long since disappeared. There are no known examples of curses written on birch bark but the deliberate folding of the Bretton Way bark examples and their deposition in the well hints at more than rubbish disposal. Birch bark was commonly used for letter writing in later periods, most famously in the medieval examples found at Novgorod, which include curses. In Roman Britain, lead curse tablets are often found in association with temple sites or wet places, and many examples are known from Bath and Uley, Gloucestershire. They would have been folded so that the message was hidden inside. A 3rd-century example from Uley reads: ‘The sheet (of lead) which is given to Mercury, that he exact vengeance for the gloves which have been lost; that he take blood and health from the person who has stolen them’ (Society for the Promotion of Roman Studies 2012, Uley 80).

Interpretation of the Bretton Way leatherwork is also problematical. Footwear, particularly left-footed shoes, was frequently chosen to be a component of structured deposition (van Driel-Murray 1999) and this possibility has been considered in the light of the nature of the other items recovered from the well. Taken at face value, there is no reason to suggest that the shoes were anything other than the result of casual domestic rubbish disposal. However, a possible connection between the shoes, sledge runners and travelling over frozen water has been noted above, perhaps suggesting a tangential connection.

Some aspects of the faunal assemblage also merit further discussion, specifically the presence of animal skulls, drilled bones and dog remains. ‘Special deposits’ of animal and human bone, along with a wide variety of finds, are common on both urban and

rural Romano-British sites. However, discussion of the deposition of faunal remains is hampered by the fact that many were excavated before the advent of modern archaeological techniques, with much of the animal bone either not being fully recorded or in some cases discarded entirely. This is the case with similar sites in the immediate vicinity. Features described as 'ritual shafts' containing animal bone along with pottery, various artefacts and human bone, were noted during excavations at *Durobrivae* and Castor (Perrin 1999). Such deposits were, however, recorded in detail at Castle Mound, Cambridge, where a series of 3rd- to 4th-century features were found, again described as 'shafts', nine of which contained faunal remains (Alexander and Pullinger 1999). These deposits varied in size and species distribution with shafts 6 & 11 most closely paralleling the Bretton Way assemblage; shaft 6, for example, contained 28 cattle crania. Many of the pits contained intact dog skeletons, often in association with infant burials.

Although the dog remains from the Bretton Way well may have been the result of general refuse deposition, the association between dogs and ritual is frequently apparent in Europe during both the Iron Age and Roman periods (de Grossi Mazzorin and Minniti 2006; Fulford 2001). Dogs were associated with Roman festivals such as the Lupercalia (Fulford 2001), and the association of dogs with ritual continued on Roman religious sites with Iron Age origins such as Lydney in Gloucestershire (Wheeler and Wheeler 1932). Dogs were believed to be associated with the healer gods, including Apollo, but also had an association with the underworld: such beliefs led to the sacrifice of dogs as funerary deposits and in dedication and closure rituals (Crummy and Phillips 2008, 83). Dogs appear to have been particularly significant at certain sites, such as Godmanchester, where many pits contained their remains (Crummy and Phillips 2008, 86). Similar evidence for the burial of dogs and other animals (summarised in Fulford 2001) comes from other sites including Silchester, Baldock in Hertfordshire and Springhead and Keston, both in Kent (Grimm and Worley 2011; Black 2008). Substantial deposits of cattle bones were also found in pits at *Verulamium* (Fulford 2001).

As is evident, the type and composition of 'special' pit deposits containing animal bone throughout Roman Britain varies greatly. The Bretton Way faunal assemblage appears to parallel those assemblages in which the term 'special deposit' refers to the feature rather than to the actual faunal assemblage itself, that is to say the material becomes 'special' through the act of deposition itself.

There is little in the plant assemblage from the well to suggest ritual activity or deposition, albeit that some of the plants represented have notable properties. Henbane, for example, has recognised psychoactive properties which can induce visual hallucinations and a sensation of flight. Hemlock is extremely toxic if ingested and the philosopher, Socrates, is famously known to have died of hemlock poisoning. However, the presence of these plants is not unusual on archae-

ological sites of the Roman period and it is highly unlikely that these remains represent anything other than plants of waste/disturbed/damp ground.

Conclusions

The discovery of the monumental stone-lined feature at Bretton Way has raised rather more questions than it has answered. It has not been possible to locate the source of the stones, nor has it been possible to identify the structure the stones were previously used in. The absence of steps in the feature's construction rules out the possibility of a Christian baptismal function as has been suggested for similar features elsewhere (e.g. Richborough; Brown 1971) and nothing that came from the well appears to have any Christian associations to suggest interpretation as a 'holy well'. No items of military use came from the well itself to suggest a military association, although a few were found elsewhere on the site. However the scale of the feature and the effort involved suggests that the well may have had a public role rather than being the work of one wealthy individual for private use.

It remains a possibility that this was a feature connected with a Roman god, goddess or lesser figure, perhaps a water nymph or other local deity. Alas, no convenient figurine or inscription was recovered to formally identify such a dedication. Thus a rather unsatisfactory 'ritual' definition is the most precise interpretation that can be given, or perhaps, more accurately, a 'water ritual'.

It is possible that the Bretton Way well was positioned over a 'healing spring'. The water associated with the comparable wells found at Augusta Raurica was particularly high in sulphur (Augusta Raurica 2012), a characteristic that has been attributed with healing properties since antiquity. The Roman naturalist, Pliny the Younger, for example, recommended it: *'the water is of a clear sky-blue, though with somewhat of a greenish tinge; its smell is sulphurous, and its flavour has medicinal properties, and is deemed of great efficacy in all fractures of the limbs, which it is supposed to heal'* (Pliny, *Letters*, Letter XCIII, To Gallus). A possible association between the pottery bases found within the Bretton Way well and the sun has been noted above. Apollo was the sun god and in various of his manifestations he had healing powers. *'Apollo Belenus was venerated at many curative spring shrines where miniature sun wheels were sometimes cast into the waters to placate the gods'* (Andrews 1998, 34). As discussed above, the dog was also associated with the healer gods, including Apollo and his son Asclepius, the god of medicine who is particularly associated with dogs and whose sacred dogs licked the wounds of sick petitioners at his healing shrines (Farnell 1921, 234–279).

It is probable that the Bretton Way feature served as a well or cistern until its disuse. The deposition of objects into it may then have acted as a 'closing' ceremony, rather than the feature serving as continuing receptacle for offerings throughout its life (as was

clearly the case with Coventina's Well). Most of the 'ritual' objects came from the initial backfills, with subsequent fills comprising more general rubbish. There is nothing from the rest of the site to indicate particular wealth or status, the adjacent aisled barn being of normal agricultural character, although the presence of the well itself points to some special significance. Only further work in the area may provide new evidence to place the feature into its proper context.

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Medieval Archaeology at the Old Great North Road, Water Newton, Cambridgeshire

Andrew A. S. Newton

With John R Summers, Julia EM Cussans and Peter Thompson

Excavation adjacent to 2 Old Great North Road, Water Newton revealed archaeological features dated as 9th to 13th century, a single post-medieval feature and modern layers and deposits associated with the use of the site as a garden and yard attached to the adjacent farmstead at 2 Old Great North Road.

The medieval archaeology comprised three parallel ditches, representing three successive demarcations of a boundary aligned perpendicular to the Old Great North Road, and a series of pits and short linear features representing activity within the plot defined by the boundary. Possible beamslots may represent a street frontage structure, possibly indicating that this plot represents a toft and croft-type peasant holding.

Although the Old Great North Road site is small, and the evidence regarding the nature of the activity carried out there is somewhat inconclusive, its identification comprises a significant addition to the corpus of information regarding Water Newton in the early medieval period. It increases the number of locations in the village at which Saxo-Norman activity has been identified and it can be confirmed that activity ceased, or began to cease, here at or around the 13th century; this is consistent with the theory that, at this time, there was a shift in the focus of settlement to the area around the church of St Regimius, the current building of which was constructed in the 13th century.

Introduction

In June 2012, Archaeological Solutions Limited (AS) carried out an open-area archaeological excavation on land adjacent to 2 Old Great North Road, Water Newton, Cambridgeshire (Fig. 1).

The excavation revealed archaeological remains of medieval date (10th to 13th century; Phase 1), some limited post-medieval activity (Phase 2), and extensive disturbance, mostly within the western part of the site, of late post-medieval and modern date (Phase 3).

Background

The Site

Water Newton is a small village in the district of Huntingdonshire, located c. 10.6km to the west of Peterborough. The site lies in an area of archaeological potential on the northern side of the Old Great North Road which runs broadly parallel to the modern A1. The excavation site was situated between 2 Old Great North Road to the west and Hop Corner to the east (Fig. 2). At the time of excavation, it comprised a roughly rectangular plot of scrub/grassland with an area of c. 933m².

Archaeological and historical background

The site is located in an area that has yielded a wealth of Roman archaeological remains. Settlement and industrial activity flourished following the establishment of a fort (Cambridgeshire Historic Environment Record (CHER) No. 05316) and a later civilian town at *Durobrivae* (CHER 01901) c. 1.2km to the south-east. Associated Roman sites, including villas (CHER Nos. 01710, 01876, 04457, 09094 and 09692; Greenfield 1958) and a large kiln complex (HER 09095), discovered by the antiquarian E.T. Artis, have been recorded in the surrounding area.

The earliest reference to a manor at *Niwantune* is in a charter dated to AD 937 (Cambridgeshire County Council 2002, 18). In AD 972, the manor of *Niwanton* was acquired for the Abbey of Thorney by Æthelwold, Bishop of Winchester.

Despite this documentary evidence, physical evidence for Saxon settlement in the area is lacking until late in the period (Cambridgeshire County Council 2002, 18). Excavations south of Water Newton in 1958 at Elton Road (now beneath the A1) revealed evidence for a late Saxon hall and post-built stockade (CHER 1578; Green 1964). The hall itself has been dated to the 10th to 12th centuries while later partition of the enclosure occurred in the 12th to 13th centuries (Cambridgeshire County Council 2002, 18). The location of this site, south of the later village, suggests

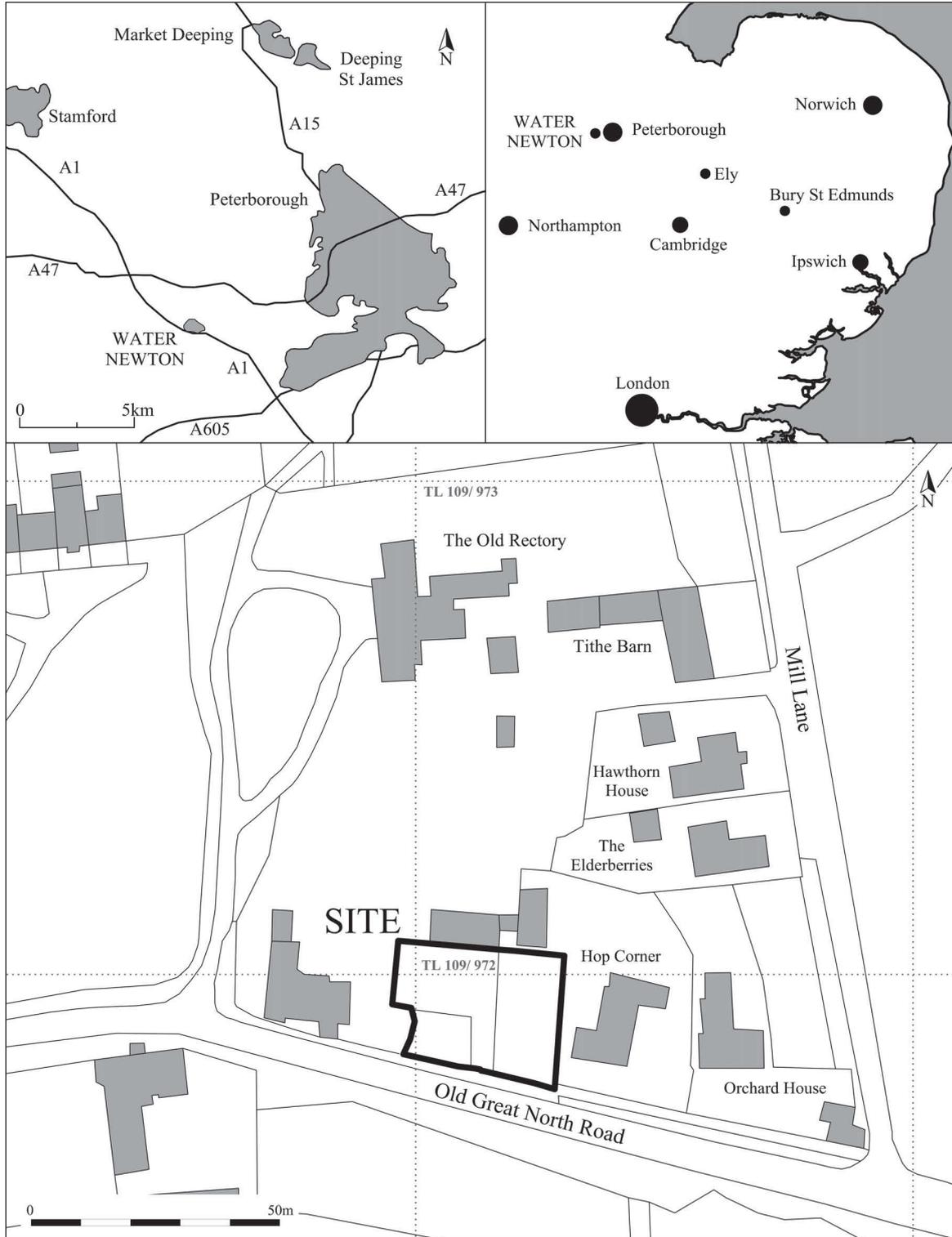


Figure 1. Site location.



Figure 2. All features phase plan.

that land to the north may then have been part of the Nene floodplain and unsuitable for settlement (O'Brien 2002). Activity at Elton Road does not appear to have continued into the medieval period and the site may have been abandoned as settlement developed close to the ford in the area in which the church of St Regimius (CHER 10332) was built in the 13th century.

The Archaeological Evidence

Evidence for early activity

Neolithic struck flint, Roman coins (4th century AD copper radiates) and 43 fragments of Romano-British brick and tile were present as residual material. The

presence of Roman artefacts is unsurprising given the proximity of Roman *Durobrivae*.

The Saxo-Norman/medieval period

The earliest dateable archaeological features recorded during the excavation were of 10th to 13th century date. Features of this date occurred mostly in the southern and eastern parts of the site (Fig. 2). Those recorded towards the eastern part of the site comprised three parallel ditches (F1123, F1145 and F1129), aligned broadly north to south, perpendicular to the Old Great North Road, adjacent to which the site lies. It may be that the ditches represent a boundary demarcating a roadside plot. The majority of the remaining medieval features were located to the west of these, suggesting that this area represented the interior of an enclosure bounded by these ditches.

An arrangement of three ditches would appear overly elaborate for the marking of the boundary of what is considered, based on artefactual evidence, to be a low-status landholding. Boundaries are 'conservative features' and can frequently be seen to have survived over long periods despite other changes to the landscape (Jones & Page 2006, 31); it is unlikely that the boundary itself changed or moved but the features marking it may have been modified over time. Indeed, there is some evidence for reworking of the boundary features; F1123 is clearly a recut of the earlier feature F1125.

Hurst (1971, 533) has suggested that medieval peasant holdings were subject to regular reorganisation as they passed from one generation to the next. Recently, this has been revised to an average period of 70 years (Gilchrist 2012, 232). Smith (2010, 72) notes that at the medieval settlement of Westbury, Milton Keynes, major reorganisation occurred every 50 to 60 years, in contrast to other medieval villages excavated in the Milton Keynes area where change was much slower. It is possible that the successive demarcation of the same boundary may be the result of this type of reorganisation, although it is difficult to identify the intervals at which this occurred at this site from the available evidence.

A series of shorter, east to west aligned, linear features (F1073, F1075 and F1077) towards the southern part of the excavated area were identified as beamslots, and as such may represent elements of a structure within the 'toft' part of the holding. These were not particularly substantial features, suggesting that any structure that they formed part of may have been of quite flimsy construction.

Evidence from the faunal and archaeobotanical assemblages is suggestive of a mixed agricultural economy. The animal bone assemblage, dominated by sheep/goat and cattle with pig, horse and dog also present, would appear to be consistent with the norm for the period in East Anglia (Wilson 1995, Wade 1996, Bedwin 1992, Hutton 2004, Sykes 2006). Wheat, exclusively of a free-threshing variety, was the dominant cereal species in the archaeobotanical assemblage and is understood to have been an economic staple during this period. The pottery assemblage is unremarkable for the area and fits neatly with the suggestion that the site represents a fairly low status peasant holding. It comprises mostly local St Neots and other shelly wares. Unglazed Stamford ware is also present.

The assemblages of artefacts that may be regarded as refuse material (animal bone and pottery, for example), recovered from the medieval features, are small, perhaps suggesting that activity of this date was not intense. Furthermore, evidence from the archaeobotanical assemblage indicates that the site was probably located close to areas of human activity but may have been on the periphery of the settlement. However, evidence from Wharram Percy, East Yorkshire, where activity of similar date has been recorded, shows that the tofts here were kept remarkably clean and contained little refuse material (Beresford & Hurst 1990,

44), indicating that a lack of refuse material does not equate to a lack of occupation.

Later activity

Following the 10th to 13th century (Phase 1) activity it appears that the site was abandoned or turned over to an archaeologically-invisible agricultural usage until the modern period. Pit F1047, which contained a partial horse burial, represents the only identified post-medieval activity at the site.

The site is depicted as comprising the garden of a property to the west on the 1674 map of Water Newton (Smith 1674). The 1837 Tithe Map (Archdeaconry of Huntingdon 1837) depicts the site as the garden of the adjacent Grade II listed 18th century former farmhouse and inn at 2 Old Great North Road (CHER DCB3072). Much of the late post-medieval/modern activity (Phase 3) recorded during the excavation, comprising cobbled surfaces and levelling layers, may be consistent with this use of the site as semi-agricultural land or gardens. Pottery from the surfaces in the south-western corner of the site and from Pit F1115 is of 17th to 18th century date, while that from the large spread of material in the north-western corner is of 18th to 19th century date. By the time that the 1902 Ordnance Survey map was published two narrow outbuildings had been established within the site. Two modern walls identified at the southern edge of the excavated area, which truncated several earlier features, clearly represent buildings shown in this location on the 1902 and 1950 25 inches to 1 mile Ordnance Survey maps (Ordnance Survey 1902, 1950).

Discussion

The function of the site in the 10th to 13th centuries

The presence of a possible boundary aligned perpendicular to the Old Great North Road would appear to indicate that the recorded Phase 1 (c. 10th to 13th century) archaeology represents a roadside enclosure.

Although it is tempting to suggest that, as a roadside plot, the site represents a medieval toft/croft peasant holding all that can be said with any certainty is that the Phase 1 archaeology comprises Saxo-Norman/medieval features representing a possible boundary and domestic activity.

The Old Great North Road site and the development of medieval Water Newton

Although the extent of medieval Water Newton remains uncertain, it is generally accepted that from the 13th century settlement in the area was focussed on the church of St Regimius, to the north (Cambridgeshire County Council 2002, 5, 24). The enclosed site recorded at Elton Road (CHER 1578; Green 1964) appears to have been in use up until the late

12th to 13th century and O'Brien (2002) asserts that the earlier Saxo-Norman settlement was focussed on this site, to the south of the current village.

The dating evidence recovered from the Old Great North Road site indicates that Phase 1 activity is likely to have been broadly contemporary with the use of the Elton Road site. Its position in relation to this suggests that it may have lain close to, but possibly on the periphery of, the main area of the earlier Saxo-Norman settlement. The 12th/13th century shift in the focus of settlement to the north provides an obvious explanation for the reduced level of activity at the site in the later medieval and early post-medieval periods.

However, Saxo-Norman remains, earlier in date (AD 875–1150) than those at the Old Great North Road site and representing domestic occupation, have been recorded further to the north, at Mill Lane (O'Brien 2002). It is also possible that a church existed at the site of St Regimius before the existing 13th century structure was erected. Indeed, it is possible that the undated manor house located to the west of the church (ruinous by 1742) was originally a Saxon foundation; the construction of a church adjacent to a manor house has been identified as a characteristic of late Saxon 'thegnly culture' carried out by the elite in order to distinguish themselves from the less well-to-do (Senecal 2000).

If late Saxon activity in the Water Newton area was as widespread as this evidence suggests, then the Old Great North Road site may not have been located at the margin of the settlement at all, making it perhaps more likely that domestic occupation did occur here.

That activity at the site should effectively cease in the 13th century (though some elements of the pottery assemblage may extend in to the 14th century) may be unusual in light of its proximity to the Great North Road. During the 13th century the route was growing in importance as a major route from London to northern England (Connor 2009, 89). The Great North Road fuelled the growth of other settlements through which it passed (O'Brien 2002) and the current site would have been an ideally suited location to take advantage of passing trade.

Conclusion

Perhaps the greatest significance of the evidence obtained from the excavation here is that it complements the results of previous work in the area to contribute to a greater understanding of the development of medieval Water Newton. Like Cambridge University's work on continuously occupied rural settlements (CORS), it has provided evidence to inform, develop, and challenge existing notions regarding past patterns of occupation in this rural settlement (Lewis 2007, 162). The CORS project has demonstrated that numerous small-scale investigations, in this case test-pitting, within and around rural settlements can assist in establishing the extent, distribution and date of human activity within, across and around that set-

tlement (Lewis 2010, 84). Clearly, if this is the case, then a concentration of small-scale development-led interventions, such as that described in this paper, within the core of a rural settlement can have a similar effect. However, as Thomas (2006, 34) notes, the nature of such work has not lent itself to meaningful publication on a settlement by settlement basis. In Leicestershire, a project aimed at synthesising the results of developer-funded work conducted in the cores of historic villages has been initiated to aid the study of medieval rural settlement (Thomas 2006, 34). The work conducted in Water Newton may make a notable contribution to such a project in Cambridgeshire.

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Plate 2. Leather shoe from the Late Roman well/cistern at Bretton Way, Peterborough.

Some Splendid Rooms: Further Archaeological and Architectural Investigations in Jesus College, Cambridge, 1998–2011

Richard Newman, Alison Dickens and Christopher Evans,
with C Begg, R Darrah, I Tyers and D Webb

Representing both the best preserved monastic site and the most thoroughly investigated collegiate site in Cambridge, the archaeology of Jesus College is of national importance. Recent architectural and archaeological investigations have revealed new information pertaining to both the pre- and post-conversion design of two of the college's most important buildings; the eastern range of Cloister Court and the chapel. Discoveries include the identification of a probable vaulted undercroft within the nuns' dayroom, the exposure of a portion of the former nave-aisle arcade and a reconstruction of the steeply-pitched nave roof of 1510.

Between 1998 and 2011 the Cambridge Archaeological Unit (CAU) undertook ten campaigns of archaeological and architectural investigation within the grounds of Jesus College, Cambridge (Fig. 1):

- (1) An archaeological evaluation conducted for the New Accommodation Block site (Whittaker 1998)
- (2) Architectural recording within the first-floor Fellows' Common Room (Baggs *et al.* 1999)
- (3) Architectural recording within the east wing of the Master's Lodge (Begg 2001)
- (4) An archaeological watching brief within the Master's and Fellows' Gardens (Hall 2001)
- (5) An archaeological watching brief within Chapel Court (Brudenell 2004)
- (6) An archaeological watching brief within Cloister Court (Ten Harkel 2005)
- (7) An archaeological watching brief within Cloister Court and the east wing of the Master's Lodge (Hall 2005)
- (8) Survey and recording of the timbers constituting the chapel nave roof (Dickens *et al.* 2007)
- (9) Architectural and archaeological recording within the east range of Cloister Court and the western portion of Chapel Court (Newman & Webb 2011)
- (10) An archaeological watching brief primarily within Chapel Court (Evans *et al.* 2012).¹

Largely small in scale, each of these investigations took place in advance of development-led service-installation and/or refurbishment works. As a result, their locations were not targeted according to a pre-existing research agenda, but were instead determined by the nature of the works undertaken. Consequently, the results that were recovered were often of limited scope. Indeed, only three of these projects – Numbers 3, 8 and 9 in the above list (highlighted in red in Fig. 1) – could be considered to have made any substantive contribution to the wider understanding of the site's development and history. It is these investigations that form the focus of the following account.

Historically, the sequence at Jesus College can be broadly sub-divided into two phases. The first commenced in *c.* 1138 when the Benedictine Nunnery of St. Mary and St. Rhadegund was founded on an area of former agricultural land situated on the outskirts of Medieval Cambridge. By *c.* 1250, the monastic complex was already well-established (Fig. 2). From the mid 14th century onwards, however, the nunnery was in decline; it was eventually suppressed by John Alcock, Bishop of Ely, in 1496. Alcock demolished the majority of the pre-existing monastic structures and converted the remainder for collegiate use. The newly founded institution – officially named the College of the Blessed Virgin Mary, St. John the Evangelist and the glorious Virgin St. Radekund (Glazebrook 2007, 15) – was initially one of the smallest, and poorest, colleges within the University, but has subsequently developed into one of the wealthiest (for further detailed information on the history of the site see; Willis & Clark 1886 II, 115–86; Gray 1898; RCHM(E) 1959, 81–98; Gray & Brittain 1960; Haigh 1988; Van Houts 1992; Glazebrook 2007).

Following on from a small number of 19th century antiquarian excavations (see Gray 1894; Willis & Clark 1886 II, 121–41; Evans *et al.* 1997, 106–7), a series of development-led archaeological and architectural investigations were conducted at Jesus College between 1988 and 1997. Collated and published in 1997, these formed the basis for a wide-ranging examination of the site's historical and archaeological development (Evans *et al.* 1997). It is this framework upon which the present paper builds.

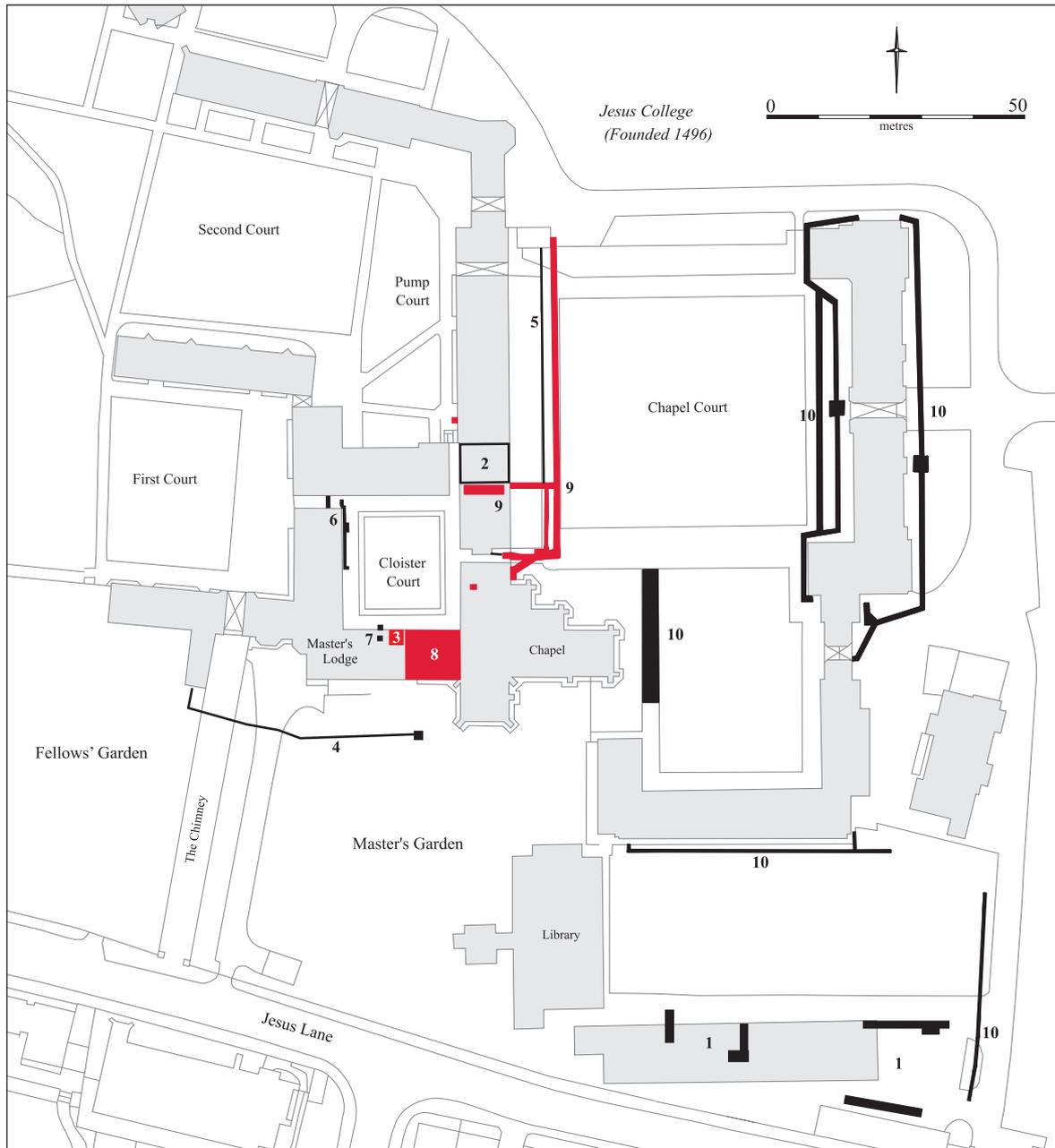


Figure 1. Location of investigations.

Eastern Claustal Range and Environs

The first investigation took place within and around the eastern range of Cloister Court (Fig. 1, 9). During monastic times this structure housed the sacristy or vestry, chapterhouse, nuns' dayroom and reredorter, along with a first-floor dormitory (Fig. 2). Of these areas, the chapterhouse, in particular, has previously comprised the focus of significant investigation (e.g. Gray 1894; Evans *et al.* 1997, 105–20). Between May and October 2010, a new phase of refurbishment works was undertaken within the eastern range itself while associated service-trenching occurred across the western portion of Chapel Court (Fig. 3). A total

of seven separate areas were monitored, although in each instance the investigations were relatively small (Newman & Webb 2011). Nevertheless, three locations in particular – Areas 4, 5 and 6 – yielded significant results pertaining to both the monastic and collegiate phases of the site's history.

Monastic Phase (c. 1138–1496)

During external service works conducted in Area 4, several features of monastic date were identified. The most significant comprised two remnants of the southern wall of the former chapterhouse that had become isolated from the main body of the structure. The easternmost – F.20 (0.80 x 0.65m)

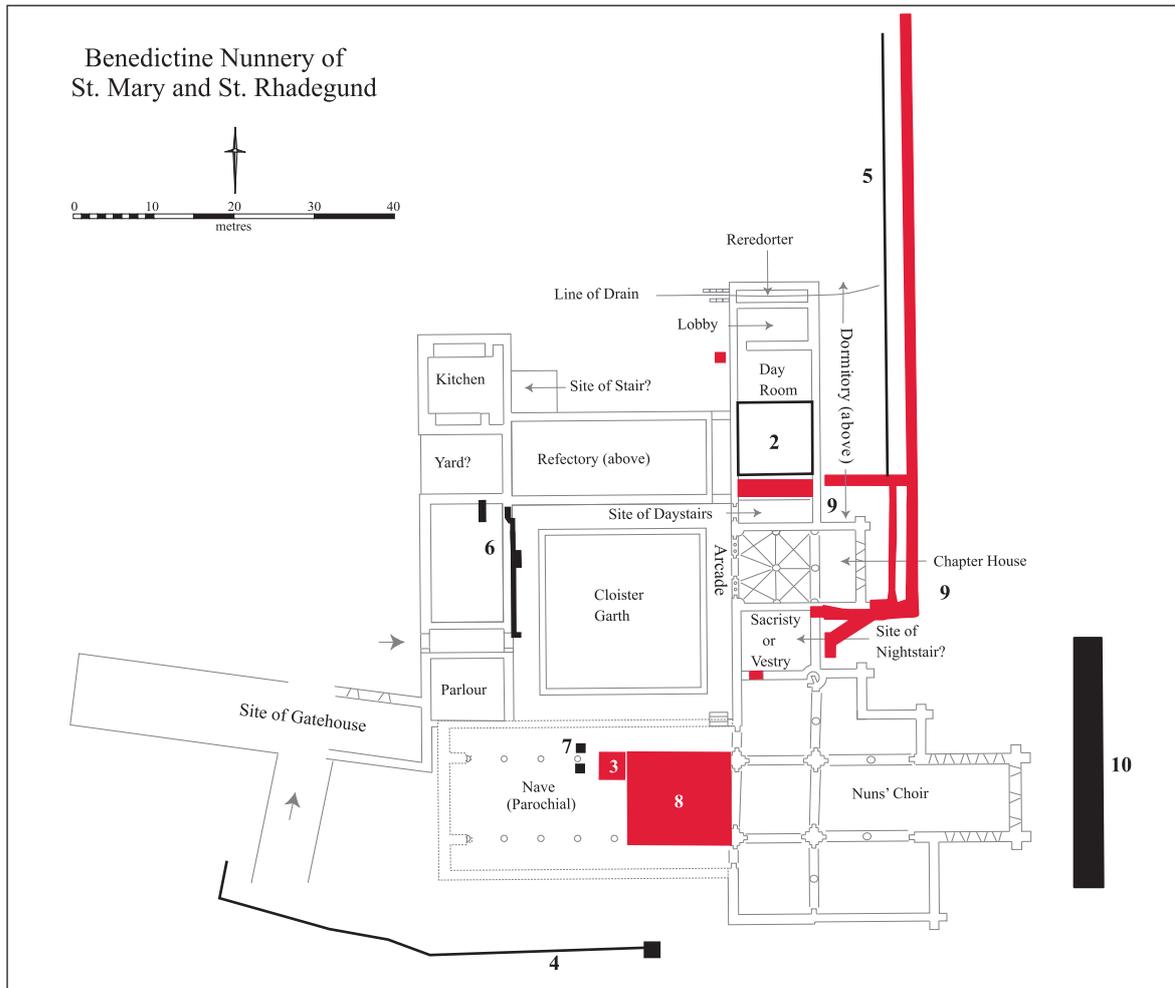


Figure 2. Reconstructed plan of monastic complex, c. 1250. Note that the first floor dormitory extended above the entirety of the east range, including the chapterhouse.

– comprised part of the southeastern buttress of the building. Although heavily truncated by 20th century services, two important details could be discerned. Firstly, only a single course of ashlar – representing the vestiges of a plain chamfered plinth composed of dressed Barnack blocks – was present. This can be compared with the three courses of ‘wrought masonry’ that were previously identified in this location during Gray and Atkinson’s 1894 investigations (Gray 1894, 121; see also Evans *et al.* 1997, 106–07). Secondly, the buttress was supported by an extensive mortared rubble foundation, over 0.36m deep, which was broadly pyramidal in form. This contrasts with the previous exposure of this building further to the west, where it had little or no foundation (Evans *et al.* 1997, 109–111).

The second remnant of the chapterhouse wall (F.21) was identified within the adjacent archway of the F-stair passage-way. This consisted of a ‘T-shaped’ segment – composed of well-mortared, roughly-squared clunch blocks – with truncated arms extending east-west and north-south. Although less well-preserved than the buttress to the east, this fragment unambiguously demonstrates that the chapterhouse comprised part of the same contemporary build as the adjacent sacristy/vestry, and thus also the remainder of the eastern claustral range. Moreover, its presence serves to fix

precisely both the location and alignment of the chapterhouse’s southern wall.

Also present at the southern end of Area 1, and lying only a short distance to the east of the chapterhouse, were three undated postholes (F.08, F.09 and F.12). These were aligned on an west-northwest by east-southeast axis. Their function is uncertain, for while they were of a sufficient size to have been structural in origin, they might equally well have comprised part of a fenceline or other external subdivision. Subsequently, the westernmost posthole (F.12) was overlain by an ancillary timber-framed structure. This was represented by floor remnant F.13, which consisted of irregular split Collyweston stone fragments bedding upon a layer of coarse yellow sandy mortar (Fig. 3A). The impression of a north-south aligned timber sill beam had also been preserved in the mortar’s surface. Measuring a minimum of 3 x 1.3m in extent, this building almost directly abutted the chapterhouse’s east wall. Due to the degree of later truncation, its original form and function remain unclear.

Internally, excavations conducted within Area 6 – presently the Fellows’ Cloakroom and, in monastic times, the southern end of the nuns’ dayroom – uncovered part of the original east wall of the nunnery’s eastern claustral range (Fig. 4). The lowest portion of this wall consisted of roughly

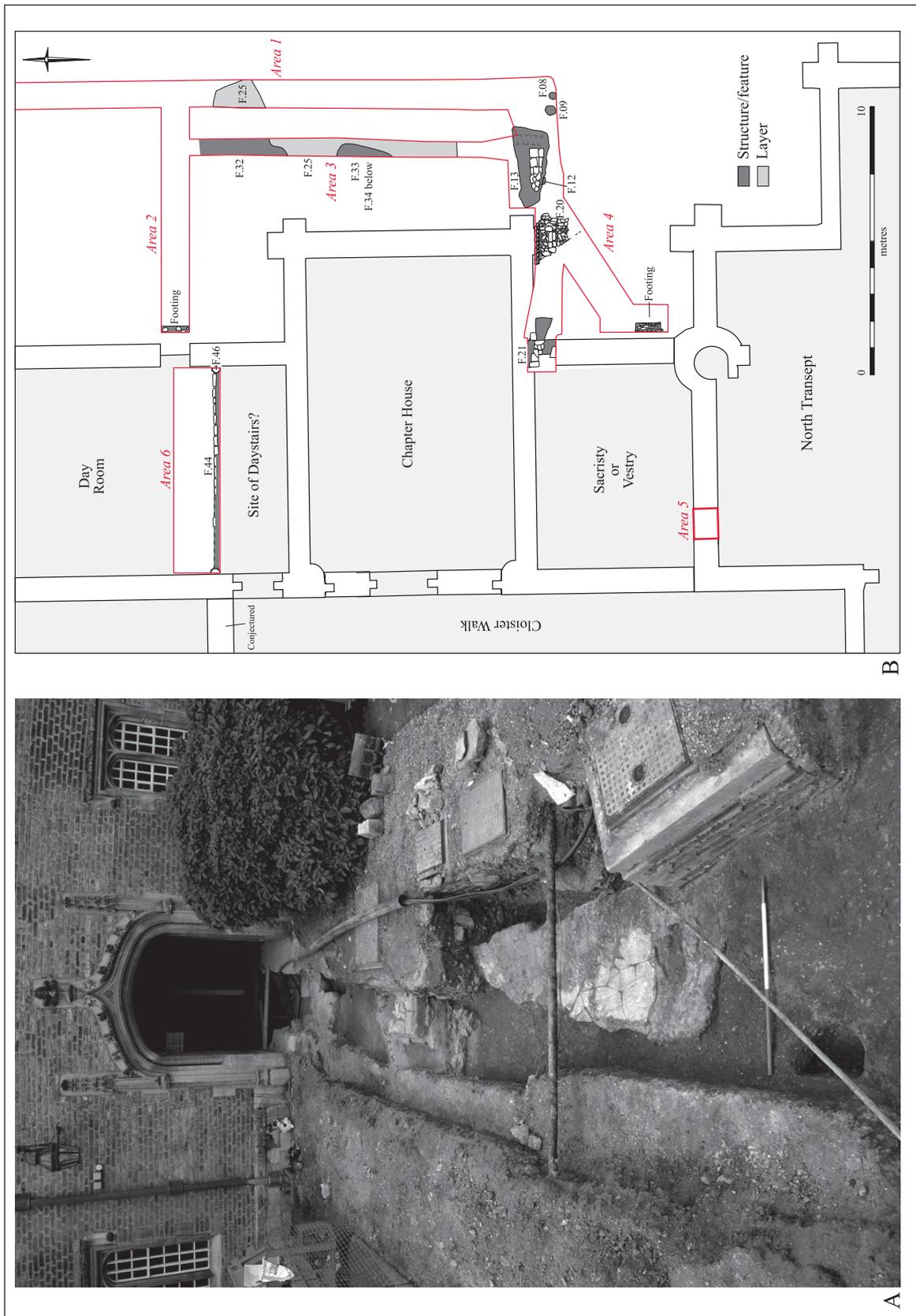


Figure 3. View of excavation in Area 4, facing west (A), and plan of archaeological features (B).

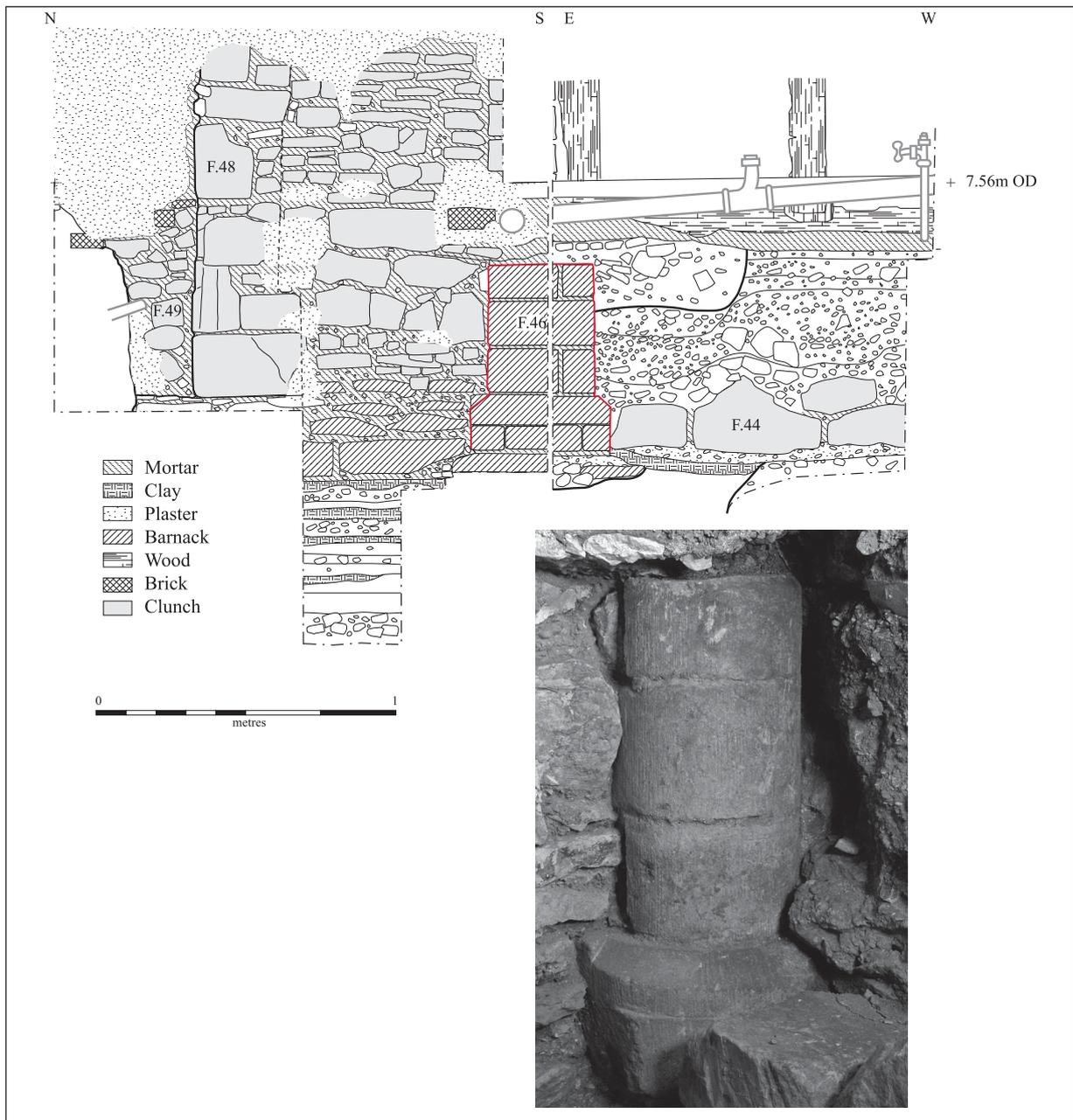


Figure 4. West and north facing sections of Area 6, with inset photograph of in situ wall-shaft F.46.

coursed Barnack slabs, above which were set three courses of roughly squared clunch blocks that were, in turn, surmounted by roughly coursed clunch fragments; the masonry was bonded throughout with a relatively consistent coarse yellowish grey sandy mortar. This exposure is thus commensurate with the fabric of the east range as previously recorded in 1995 (Evans *et al.* 1997, 114–15). Of particular interest was the survival of the lower part of a semi-circular respond of Barnack stone (F.46).

The three *in situ* sections of the respond measured 0.30m in diameter. They were bonded to the wall in the standard way, with alternate courses butted and keyed. The lowest section stood on a plain chamfered base, which was stopped against the wall, and below it was a plain semi-octagonal sub-base (0.36m wide; Fig. 4). In addition, the lower parts

of a second, identical respond were also noted in the same relative position on the opposing western wall of the room. This latter example had been discovered and preserved by the college during an earlier phase of works, but its presence has not previously been recorded.

Both of the responds identified within the nuns' dayroom correspond closely in form with columns previously identified elsewhere within the eastern claustral range. In the area of the former chapterhouse, for example, near-identical octagonal sub-bases carrying columns c. 0.35m in diameter were recorded in 1995 (Evans *et al.* 1997, 112). In contrast to the responds discussed above, the columns associated with the chapterhouse vault also bore integral ribs. There can, nevertheless, be little doubt that the two builds are contemporary. Together, they appear to have formed part of a

single, cohesive 13th century phase of construction/rebuilding that encompassed the entirety of the cloister's eastern range.

Abutting the base of respond F.46 was a compacted layer of chalky clay. A remnant of the original 13th century dayroom floor, this lay at 6.62m OD – almost precisely the same level as the floor of the chapterhouse. Subsequently, this surface was sealed beneath, and partially truncated by, a later dividing wall, F.44. This latter feature – which measured 0.38m in width, and survived to a height of two courses – extended east-west and had partially subsumed the two earlier responds. It was composed of squared clunch blocks, bonded with coarse yellow sandy mortar, many of which bore traces of render/plaster on their northern faces. Where the wall abutted the earlier responds, the clunch blocks had been carefully trimmed in order to incorporate their profile. Although clearly not an original feature, the materials employed in this wall's construction – allied with the evidence of rendering some 0.8m below the level of the later college floor – all indicate that it was monastic, as opposed to collegiate, in date.

Finally, one further feature in Area 6, doorway F.48, may also represent a later monastic-period insertion. Only the lower portion of its southern doorjamb was present within the area of investigation; this was constructed from dressed clunch blocks decorated with a partial plain chamfer, which was stopped 0.36m from the base (Fig. 4). As the doorway was inserted 1.0m to the north of column F.46 it would have continued to provide external access into the dayroom following the erection of dividing wall F.44, and may even have been inserted contemporaneously with its construction. Its threshold lay 0.20m above the original floor height. This disparity may reflect an increase in the external ground level prior to the door's insertion, but could also indicate that the dayroom floor was partially cellared.

Very little material culture of Medieval date was recovered during the investigations. A small quantity of 13th–15th century pottery was found redeposited within later made-ground layers in Area 4. Accompanying these sherds were a late 15th-early 16th century 'boy bishop' token (Rigold 1977; Fig. 5.1) and a 13th–15th century lead stylus, which is similar to examples from Coppergate, York (Ottaway & Rogers 2002, 2934). A ring-and-dot decorated bone strip or fitting, of probable Medieval manufacture, was also recovered from Area 1 (Fig. 5.3).

Collegiate Phase (c. 1496–present)

In addition to monastic-period features, evidence of activity pertaining to the succeeding collegiate phase was also identified. In the first instance, a number of features associated with the conversion of the former claustral range – beginning c. 1496 – were encountered. In Area 6, for example, an extensive layer of demolition debris overlay the partially demolished remnants of a Medieval dividing wall, F.44. This deposit contained a large quantity of dressed and moulded stone – including at least one fragmentary vault rib – which was clearly derived from an episode of extensive alteration/demolition. Furthermore, the debris also appears to have been utilised as make-up material, thereby substantially raising the level of the floor (by a minimum of 0.6m). An almost identical deposit, corresponding to a similar increase in surface level, was previously identified within the area of the former chapterhouse in 1995 (Evans *et al.* 1997, 115).

Additional alterations undertaken to the layout of the

former dayroom at this time included the partial blocking of doorway F.48. The lower portion of this feature was infilled with mortared rubble – primarily consisting of clunch fragments, but also including a small quantity of brick and tile (F.49) – whilst the upper portion was converted into a window *via* the addition of a moulded frame. Due to the marked increase in the contemporary floor level, it is likely that the original head of the doorframe was broken out as part of the process of the window's insertion; a process that also occurred elsewhere within the range during this period (RCHM(E) 1959, 91).

Further to the south, in Area 5, additional evidence of the process of conversion was encountered. Here, a round-arched 12th century doorway – first identified in 1995 – had originally provided access between the north transept and the 13th century sacristy/vestry situated at the southern end of the east range. This was now infilled. In contrast to the dayroom doorway, no brick or tile was employed in its blocking and, instead, a large quantity of dressed and moulded stone – including a number of apparently unused rough-outs – was inserted. Whilst it is possible that the infilling occurred prior to the college's acquisition of the site, the importance of this access route to the former monastic inhabitants (and its corresponding lack of importance following the convent's suppression), implies that it is most likely to have comprised part of Bishop Alcock's wider programme of alterations.

Similarly, the nature of the materials employed in the infilling – which included fragments of a capital with stiff leaf decoration, a doorjamb, a window sill and a vaulting rib, as well as a block with elaborate painted decoration (Fig. 5.5) – also suggest that it formed part of a much larger episode of demolition/reconstruction, potentially involving a number of different monastic-period structures. The removal of this blocking as part of the recent refurbishment has allowed the former pre-collegiate routeway to be re-established.

Externally, in Areas 1 and 3 further evidence of the widespread programme of late 15th century demolition/conversion was encountered. An extensive, though irregular, mortar surface was present (F.25), lying immediately to the east of the former chapterhouse. No evidence of any associated structure was identified, however, implying that the surface – which, given its constituent materials, would have been highly susceptible to the elements – was only temporary. This interpretation is also supported by its form as, although well-made, it was somewhat uneven and sloped markedly southward.

The mortar surface was subsequently overlain by a very dense layer of mortar fragments and building debris, a high proportion of which was almost certainly derived from the demolition of the adjacent chapterhouse. Whilst such debris also extended south of F.25 – where it overlay the earlier ancillary timber-framed building – it was noticeably denser in the area of the mortar spread. This implies that F.25 comprised a temporary working surface that was only briefly utilised during the process of demolition, probably to facilitate the reclamation of the most suitable material (see Howard 2003). That such a large quantity of demolition debris still remained more or less *in situ* (the layer being up to 0.38m thick) is perhaps somewhat surprising. It would appear, however, that – concomitant with the contemporary increase in internal surface level discussed above – the external ground height was also raised during this period.

In addition to evidence pertaining to the late 15th century conversion of the east range, features associated with its subsequent usage and occupation were also identified. In Area

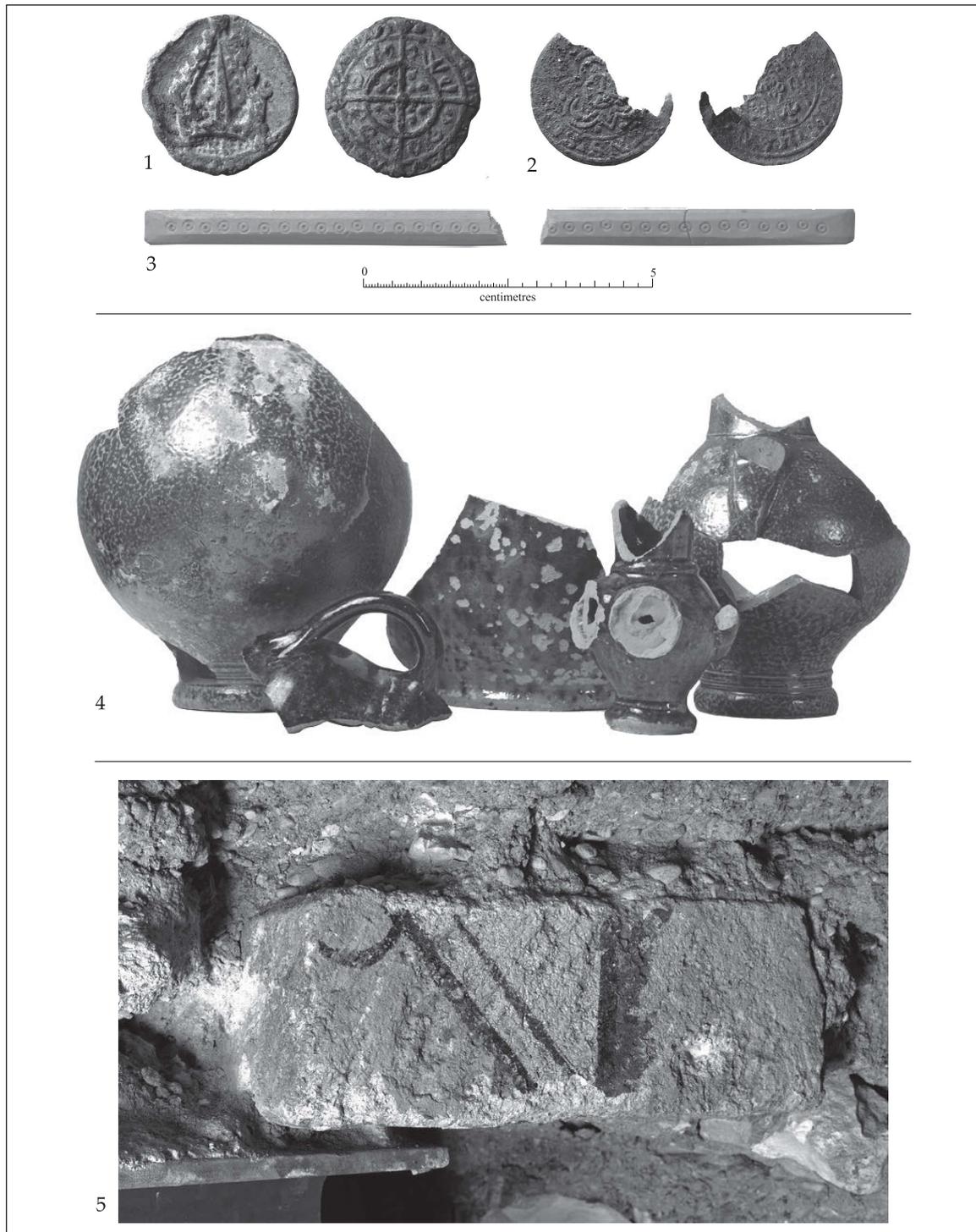


Figure 5. Late 15th century lead 'Boy Bishop' token (1); 17th century copper-alloy Nuremberg jetton (2); Medieval worked bone strip (3); selection of 17th century ceramics recovered from F.33 (4) and Medieval painted ashlar used as infill in Area 5 (5). The design upon the latter is unclear. It may represent part of a decorative frieze, perhaps imitating a pediment, but could alternatively have comprised part of a larger, more elaborate scheme. Colour-wise, it has a reddish-brown band to the right, white pigment in the centre and pinkish colouring to the left.

3, for example, three large pits were encountered. The earliest of these, F.34, was probably late 16th-early 17th century in date. It was succeeded by F.33 later in the 17th century, before the sequence was finally capped by F.32 during the

late 17th-early 18th century. Each of these pits was relatively large, measuring over 3.0m in diameter, but quite shallow. They thus appear most likely to have comprised planting beds or similar, horticulturally-related features.

The basal fill of F.33 contained a relatively substantial ceramic assemblage. Totalling 115 sherds (3114g), this material was dominated by glazed red earthenware and Frechen stoneware (Fig. 5.4); a common regional pattern during this period (Edwards & Hall 1997; Cessford & Dickens in prep.). Also present was a small quantity of green-glazed fineware. This included a largely complete two-handled jug of unusual design (Fig. 5.4), along with a rim fragment of pierced fretwork form; both of these vessels appear most likely to have been manufactured in Essex. Finally, a sherd of Babylon-type lead-glazed earthenware from Ely was identified that bore embossed anthropogenic decoration (cf. Cessford *et al.* 2006, 65–7). In addition, the feature's faunal assemblage (43 fragments) was overwhelmingly dominated by sheep/goat. Overall, therefore, although small, this group is relatively significant as to date only a limited number of comparable assemblages have been recovered from secure collegiate contexts in Cambridge.

Contemporary with the pits, and continuing to accrue long after they had been backfilled, were a series of made-ground/horticultural deposits. Within these was a moderately-sized, though heavily intermixed, pottery assemblage (359 sherds; 7256g), spanning the 14th–19th centuries. A number of metal artefacts were also present, including two 17th century jettons (Fig. 5.2) and a copper alloy furniture mount, as well as an iron spur and a pair of metalworking pliers. In addition, a relatively large assemblage of 17th–18th century clay tobacco pipes was recovered, several of which bore identifiable maker's marks. Finally, the fragmentary remains of two 18th century wine glasses were also present, along with an 18th–19th century worked bone needle case. It is possible that much of this latter material did not originate from the college itself, however, as evidence of contemporary night-soiling activity was previously identified in the area of the Master's Garden in 1992 (Evans *et al.* 1997, 136–37).

Whilst not resulting in a radical reappraisal of the eastern range's layout or history, the results of this investigation closely complement the preceding phase of chapterhouse recording (Evans *et al.* 1997, 105–20). Externally, the fragmentary buttress and wall remnants encountered in Area 1 provide crucial information concerning the precise location of the demolished exterior portion of this structure. The new evidence indicates that the chapterhouse originally extended at least a metre further to the east than has previously been recorded (RCHM(E) 1959, facing page 84), but agrees with the alignment of the walls visible in the one surviving photograph of Gray and Atkinson's 1894 excavation (Evans *et al.* 1997, plate i).

In addition, the presence of a timber-built ancillary structure, whilst somewhat unexpected, is by no means extraordinary. Numerous outbuildings – such as a kitchen, brew-house, servants' quarters and stables – are likely to have been present in and around the majority of contemporary monastic precincts (Greene 1992, 4–11), although it should be noted that it is unlikely that buildings as substantial as these were situated in close proximity to the chapterhouse. Moreover, many ancillary structures underwent several phases of development. Just such a sequence is indicated at the present site by the existence of an earlier post alignment, sealed beneath structure F.13,

which is paralleled by a further posthole that was encountered beneath the chapterhouse during the 1995 investigations (Evans *et al.* 1997, 108).

This latter posthole clearly predated the erection of the extant 13th century chapterhouse, and potentially comprised an element within a preceding timber building. Historical accounts indicate that the earliest structures in the majority of monastic foundations are likely to have been constructed from timber in this way (Burton 1994, 135). Indeed, at Norton Priory in Cheshire two successive phases of timber cloister were found to have predated the final masonry version of the structure (Greene 1989, 94). The discovery of a second mortar surface, situated – at some depth – within a small sondage excavated in First Court in 1995 (Evans *et al.* 1997, 139–40), indicates that additional early/temporary structures may also have been present elsewhere within the nunnery.

Internally, perhaps the most significant result comprised the identification of two *in situ* responds located within the former dayroom. Their form indicates that they could potentially have comprised part of a scheme of decorative arcading situated around the interior of the dayroom. But a much more plausible interpretation of their presence is that this space – which directly underlay the nuns' dormitory – was originally vaulted, in a similar manner to the lower storey of the chapterhouse (see Fig. 2). Despite thorough investigation, however, no evidence of a central column was identified, though the area had been subject to extensive later modification and it is possible that any such evidence had been removed.

The existence of vaulting is supported by the presence of vault rib fragments within the late 15th century demolition horizon, and also by the identification of additional semi-circular respond fragments that had been reused locally within the conversion-period wall cladding. Moreover, the partially-celled floor height in this area – almost precisely matching that previously encountered within the chapterhouse itself – strongly indicates that a similar roofing strategy was employed. Indeed, vaulted dayrooms of this type comprised a relatively common feature within many contemporary moderately-sized monasteries. Similar arrangements were present at Cleeve Abbey, Somerset (Gilyard-Beer 1990) and Forde Abbey, Dorset (RCHM(E) 1952, 240–46; Robinson 1998, 109–10), for example, both of which had chapterhouses near identical in form to that at St. Rhadegund's nunnery.

The archaeological evidence of early collegiate activity that was recovered during the recent investigation closely accords with what was previously known of the conversion of the east range in c. 1496–1500. It appears that, at this time, the building's interior was entirely gutted – with the exception of the lower portion of the reredorter and adjacent dividing wall, both of which are situated at the extreme north end of the structure – and the projecting eastern portion of the chapterhouse demolished (RCHM(E) 1959, 91). The remainder of the range was then sub-divided into three equal bays *via* the construction of two free-standing chimney stacks. A new timber-built interior structure

was introduced, raising the range from two storeys to three, and the earlier masonry walls were largely re-faced in brick (Evans *et al.* 1997, 97). The identification of a temporary yard surface situated immediately to the east of the former chapterhouse, which appears to have been utilised during the course of the latter structure's demolition, underlines the degree of planning and organisation required in order to implement this ambitious programme of conversion.

Finally, the recovery of later, 17th century collegiate material is also of interest. Such finds offer the tantalising prospect of examining the vexed, but previously little-studied, relationship between contemporary 'town and gown' communities (see further Parker 1983). The possibility of identifying such subtle distinctions archaeologically remains problematic, however. Firstly, for example, it seems that although in both physical and social terms the boundaries of the college were rigidly maintained – and strongly demarcated – during this period, on a purely materialistic plane it represented a rather more 'permeable' space. Individual items were probably introduced and removed from the site on an episodic basis according to the various dictates of need, fashion and/or personal taste. Moreover, there is no valid reason to assume that hierarchical distinctions which were pertinent during the active use-life of an object – such as a division between the possessions of scholars and staff – will have been maintained post-discard. A wide array of refuse may have become intermixed, or been middened within communal dumps, prior to its deposition.

East Wing of the Master's Lodge

The focus of attention now shifts to the southern portion of Cloister Court. Here, within what is today the east wing of the Master's Lodge, an architectural investigation was conducted in November 2000 (Begg 2001; Fig. 1, 3). Historically, the east wing occupies four-and-a-half out of the original seven bays of the monastic-period church's nave (Fig. 2). This portion of the building, constructed *c.* 1200, represents the second oldest element of the surviving structure (RCHM(E) 1959, 88). Its size is attributable to the parochial role it served during monastic times; a function that was no longer required following the nunnery's conversion. In addition to reducing the nave's length by two-thirds, the reconstruction works that commenced in *c.* 1496 included the demolition of the north and south nave-aisles and the construction of new lateral walls, which infilled the pre-existing arcades. Finally, having separated this portion of the structure from the remainder of the chapel, the east wing was converted into a three-storied chamber-block with garret (Willis & Clark 1886 II, 170).

Architectural recording was undertaken in the northeast corner of the east wing in advance of the insertion of a new staircase. During the course of this work, elements pertaining to both the monastic and collegiate phases of the struc-

ture's history were uncovered (Fig. 6). In the first instance, part of the shaft of a large circular clunch-built pier – F.1 (0.70m diam.) – was revealed. This had first been exposed during the 17th century when a timber-fronted cupboard was inserted into the base of the lodge's north wall. The pier, upon the surface of which traces of rough lime mortar still adhered, comprised part of the original early 13th century nave-aisle arcade. Prior to its re-exposure, it had lain subsumed within the conversion-period lateral wall. Following the shaft's identification, the remaining plaster was removed from the affected portions of the north and east walls on both the ground and first floors in order to allow the full extent of the surviving early fabric to be traced.

As a result of this exposure, the pier's capital was revealed (F.2). Although partially truncated by the insertion of later floor joists, its simple design – consisting of a plain concave moulding with necking below – remained clearly discernible. Traces of a very faded painted motif were also present, possibly representing a simplified, non-moulded imitation of stiff-leaf style decoration. Above the capital – springing from an abacus that remained primarily concealed, but appears to have been carved from a separate block – were two arches. That to the east was relatively well-preserved (F.3); it had plain mouldings, which were only partially exposed, and appeared most likely to be two-centred in form. That to the west, however – F.4 – had been heavily truncated by the insertion of a later window. Directly overlying the arches, the surviving early 13th century arcade wall fabric consisted of small, irregularly coursed clunch and Barnack fragments bonded with pale brown lime mortar (F.5).

In addition to these remnants of the original monastic church, elements of the succeeding early 16th century conversion-period build were also identified. Infilling the earlier arches, for example, and surrounding the first-floor window, was fabric of a very different character. Here, irregular – and, occasionally, reused dressed and/or moulded – clunch blocks, along with dark reddish brown brick fragments, had been employed. These were bonded with fine, pinkish-white lime mortar. This same build was also apparent within the room's east wall, which comprises the partition between the east wing and the adjacent chapel nave. Finally, the first-floor window itself – F.6, of two lights with recessed spandrels – is also of early 16th century date. It is almost identical in form to first-floor windows situated within the contemporary east and west ranges of Cloister Court (RCHM(E) 1959, 96).

Although the majority of the post-conversion wall surfaces had been rendered, and then subsequently whitewashed, on the first floor a small, isolated remnant of a painted surface was identified. Situated towards the base of the east wall, a design consisting of a pale green panel bordered by a narrow dark green vertical band was present. A similar pattern, of probable late 16th-early 17th century date, has previously been recorded within the west range of the Master's Lodge. This consisted of white panels bordered by green bands edged in black (Evans *et al.* 1997, 127).

Perhaps the most remarkable collegiate-period feature comprised a 17th century ground-floor cupboard F.7. This took the form of an alcove (1.92 × 1.50m and 0.48m deep) that had been cut into the pre-existing wall. An oak frame, bearing simple ogee-moulded decoration, was then erected across the alcove's entrance. Onto this, two panelled oak doors were attached. Internally, however, only the western half of the cupboard provided usable storage space. Its eastern half was almost entirely occupied by the 13th century nave-aisle pier (F.1), which appears to have been preserved

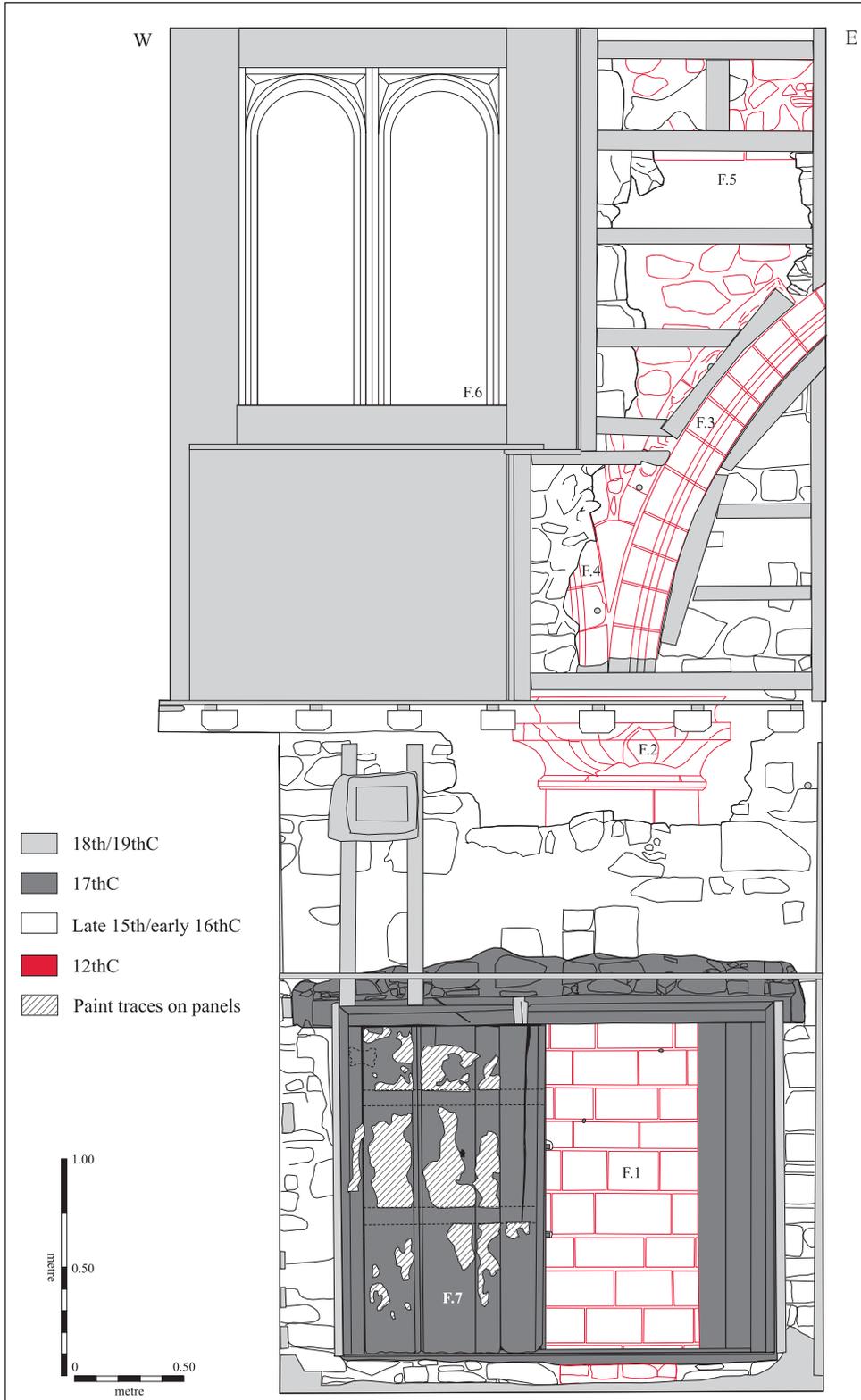


Figure 6. North wall elevation of the east wing of the Master's Lodge (note that for illustrative purposes, the right-hand cupboard door has been omitted).

in situ due to the recognition of its continued structural importance. Why the position of the cupboard was not altered following the pier's identification remains unclear.

Subsequently, during the 18th-early 19th century, the cupboard went out of use. Its doors were first nailed shut, then wallpapered over and, finally, whitewashed. All of its fixtures and fittings were also removed. At around the same

time a series of battens were introduced to the walls on both the ground and first floors, onto which new lath-and-plaster surfaces were attached.

It was not until 1846, during an episode of extensive renovation, that evidence of the once impressive layout and extent of the former Medieval church first

came to light. As a result of chance discoveries made at this time “it was resolved to push the enquiry to the utmost; all the plaster was stripped off the inner face of the walls; piers and arches were brought to light again in all directions” (Willis & Clark 1886 II, 124). A thorough record of these remains was made by Professor Robert Willis, a noted mechanical engineer and architectural historian. Significantly, within the extant college nave Willis identified remnants of the former arcades that had been encased within the conversion-period walls. The arches themselves, which were two-centred, had plain mouldings whilst the piers that supported them alternated between cylindrical and octagonal in design (a pattern that is perpetuated by the latest discovery). The relationship between the recent exposure and Willis’s 19th century chapel elevation is shown in Figure 7.

Previously, it was believed that the extent to which the original nunnery-period fabric survived *in situ* was greater within the chapel than the lodge’s east wing due to the latter area’s sub-division into multiple storeys; a situation that was further compounded by the addition of extensive new fenestration (Willis & Clark 1886 II, 128). This area was not investigated during the 19th century renovations, however, and it is now clear that within the lodge’s north wall, at least, the former nave arcade remains equally well-preserved.

Although the rooms situated at the extreme west end of the former medieval church nave appear to have comprised part of the Master’s Lodge from the early 16th century onwards (Willis & Clark 1886 II, 170), the remaining two-thirds of the newly constructed chamber block – which was originally ap-

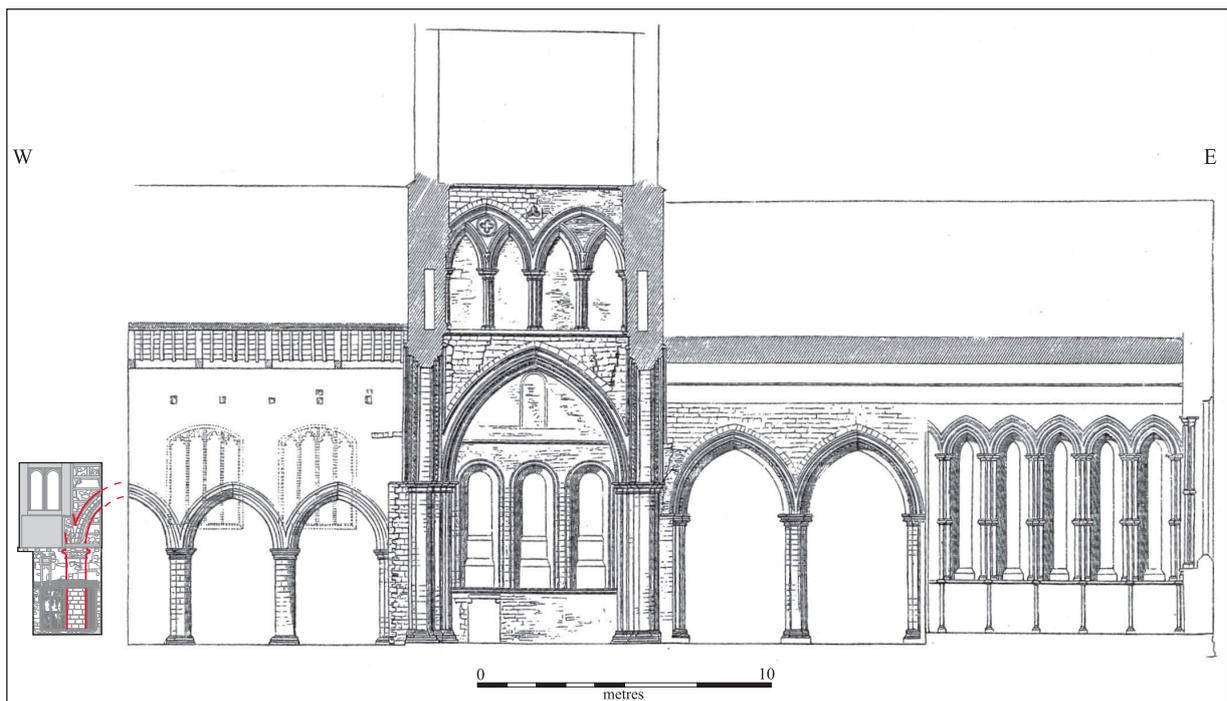
proached *via* a separate staircase arising from the south walk of the cloister – initially fulfilled a different role. A possible clue as to the initial function of this space was revealed in 1997, when a hagioscope, or squint – providing a view into the interior of the nave – was identified within the east wall of a first floor room (Evans *et al.* 1997, 128). Its presence suggests a possible ecclesiastical use. By the end of the 16th century, however, these rooms had been converted into Fellows’ apartments (Willis & Clark 1886 II, 171). Subsequently, in 1663, the ground floor chambers beneath were annexed by the Master for use as a kitchen (RCHM(E) 1959, 96), and this event provides a possible context for the introduction of the somewhat bizarre 17th century cupboard. The remaining rooms, situated on the first and second floors, were not incorporated into the lodge until 1866 (Willis & Clark 1886 II, 171).

The Chapel Nave Roof

Further information pertaining to both the form and appearance of the college-era chapel, as well as the associated chamber block to the west, was obtained in 2006. Between August and September of that year – during scheduled works conducted upon the extant chapel nave roof (Fig. 2, 8), which were designed to alter its pitch and increase the fall of its box guttering – a detailed physical survey of the structure’s constituent timbers was undertaken (Dickens *et al.* 2007). This was complemented by a programme of dendrochronological (tree-ring) analysis.

Methodologically, in order to allow every piece of

Figure 7. The recent pier-in-cupboard exposure in relation to Willis’ 1846 elevation of the north wall of the chapel.



wood to be allotted its place in the recording scheme each was allocated a unique number based upon its position in the roof. Full details of the resultant numbering system are presented within the original archive report, but have been omitted from the following account. Similarly, except where pertinent, detailed exposition of joint types, timber dimensions, etc. have also been excluded. All terms used follow the standard glossary for recording timber-framed structures (Alcock *et al.* 1996).

Extant Roof Structure

The structure that was revealed once the pine boards supporting the roof leading were removed comprised a typical king post truss roof (Fig. 8). Trusses are rigid transverse frameworks that span a roof at regular intervals, forming a series of bays. In this particular instance, four trusses were recorded. Each was composed of a tiebeam (the main transverse timber), two principal rafters (forming angled supports), a king post (providing a central vertical support) and two additional braces (Fig. 8B). This represents one of the simplest, and most common, forms of roof truss. Connecting the trusses together were a series of purlins, longitudinal timbers that are set into the plane of a roof's slope. These were tenoned into the principal rafters and arranged in a staggered pattern, with single purlins to each side. Finally, a series of regularly-spaced, identically-sized inclined timbers – known as common rafters – were joined to the purlins. Arranged in pairs, there were five sets of common rafters within the three easternmost bays of the roof, increasing to nine sets within the fourth, westernmost bay.

The entire roof was constructed from oak, save the central ridge board and its support brackets that were pine. Excluding the latter, the roof contained 129 recorded timbers: four kingposts, eight purlins, eight principal rafters, eight braces, four tiebeams, a wall plate and 96 common rafters.

At the time of recording, the roof of the adjacent wing of the Master's Lodge had a different pitch to that of the chapel. The westernmost recorded purlins, however, clearly extended beyond the area of investigation into this space. Here it was observed that they joined a fifth truss, beyond which further trusses were also visible. These appeared identical to the recorded examples discussed above, and clearly formed part of a single original structure. It is, therefore, apparent that at a later date (c. 1980) the western two-thirds of the roof was modified, raising its pitch by c. 0.4m.

Directly related to the assembly of the roof in its initial, unaltered form were three separate but contemporary numbering systems. Each of these was represented by chisel-cut Roman numerals. Firstly, the trusses themselves were numbered in a sequence that commenced at the east end of the nave and progressed westward. Secondly, the joints between the purlins and the principal rafters were numbered independently, as, finally, were also the individual common rafters.

Reused Timbers

A minimum of 65, and probably 101, reused timbers were identified within the extant roof. Recycled material thus constituted between 50% and 79% of the total recorded structure. Indeed, new timbers only appear to have been employed in its construction when no suitable earlier material was available (fresh wood being principally reserved for substantial members such as king posts and tiebeams).

Reused timbers were distinguished *via* the presence of redundant joints, re-hewn and planed surfaces and redundant carpenter's numbers. Three distinct groups were identified, which comprised:

- Group 1:* Ten timbers, each with two scribed ogee housings backed by up to four mortise holes, which were derived from an earlier roof
- Group 2:* Five timbers, each with two long mortise holes on one face and a single long mortise hole on the other, which were derived from an earlier roof
- Group 3:* More than 50, and probably 96, unidentified timbers that had been recut for use as common rafters

Group 1: Eight of these timbers had been reused as principal rafters, one as a wall plate and one as a purlin. All of their joints were identical, each having two housings scribed and carved to fit around moulded timbers (Fig. 11). These housings had flat bottoms that were cut by the mortises housing the secondary tenons on the ends of the timbers. The primary tenons had all been pegged in pairs, and where the sawn-off timbers survived *in situ* their faces were moulded and set at a partial angle. These joints occurred on two sides of six timbers and on a single side of four timbers. For the former, the pairing of joints across opposite sides, together with shared mortise slots and the angled face, suggests that these timbers had formerly comprised principal rafters. The sawn-off fragments represent the surviving ends of moulded purlins where, unusually, the moulded section had been let into the face of the rafter. This interpretation is further supported by the lack of evidence for joints on the back of these timbers. Overall, the double- and single-sided timbers constitute six double rafter sets and four single rafter sets; the numbers required for a four bay roof.

The faces of the moulded timbers were tilted forward, suggesting that they were set at an angle so that the moulding would be visible from below. This indicates that the roof was designed to be open (i.e. without a ceiling). Between each set of moulded mortises was a long plain mortise. Where the tenon survived *in situ* the grain of this long tenon was angled towards the upper purlin at 45°. This suggests the presence of a brace extending from the side of the sloping timber, the principal rafter, to the underside of the upper moulded purlin. On each of these timbers, one of the faces at 90° to those with the moulded mortises bore a second set of plain mortises. These appear to have been designed to house bracing, forming each pair of principal rafters into a truss. Based upon the angle at the top of the wide tenon housing the collar brace, this roof originally had a pitch angle of 55–60°. A reconstruction of the original roof, based upon these reused elements, is shown in Figure 9(A).

Group 2: These five timbers were distinguished from the first group by a consistent pattern of mortises, with one long socket present on the lower face and two smaller sockets above. In each case, the lower mortise was positioned centrally in relation to the other two. Initially, the possibility that these timbers might represent additional elements employed within the Group 1 roof was explored. However, the positioning of the mortises indicates an arrangement of angled windbraces. It is not possible to incorporate this arrangement into the reconstructed Group 1 roof, either within or between the trusses. Therefore, it appears likely that the

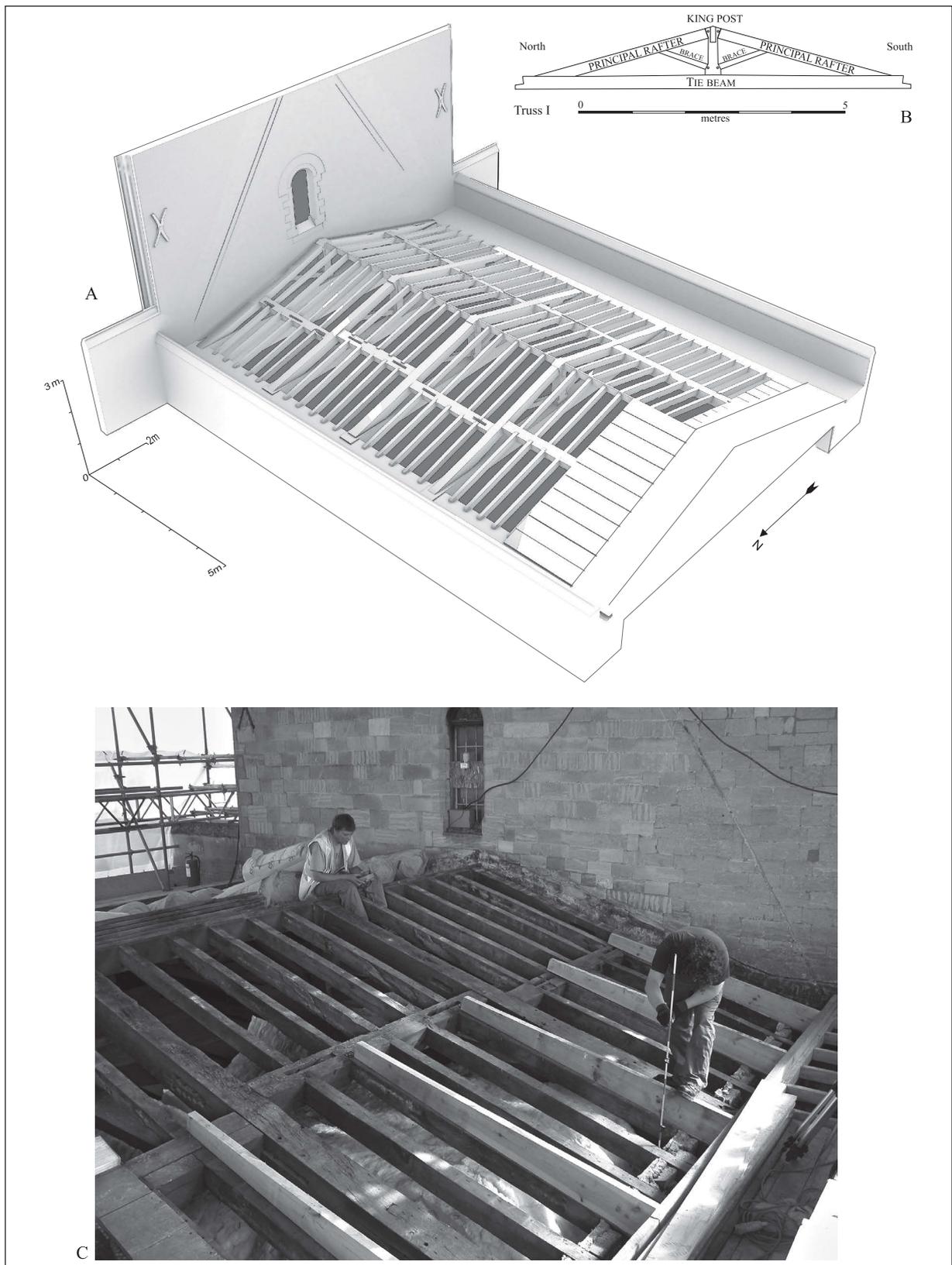


Figure 8. 3-D model of the extant nave roof (A) with labelled cross-section of a constituent king post truss (B). (C) 2006 surveying in progress.

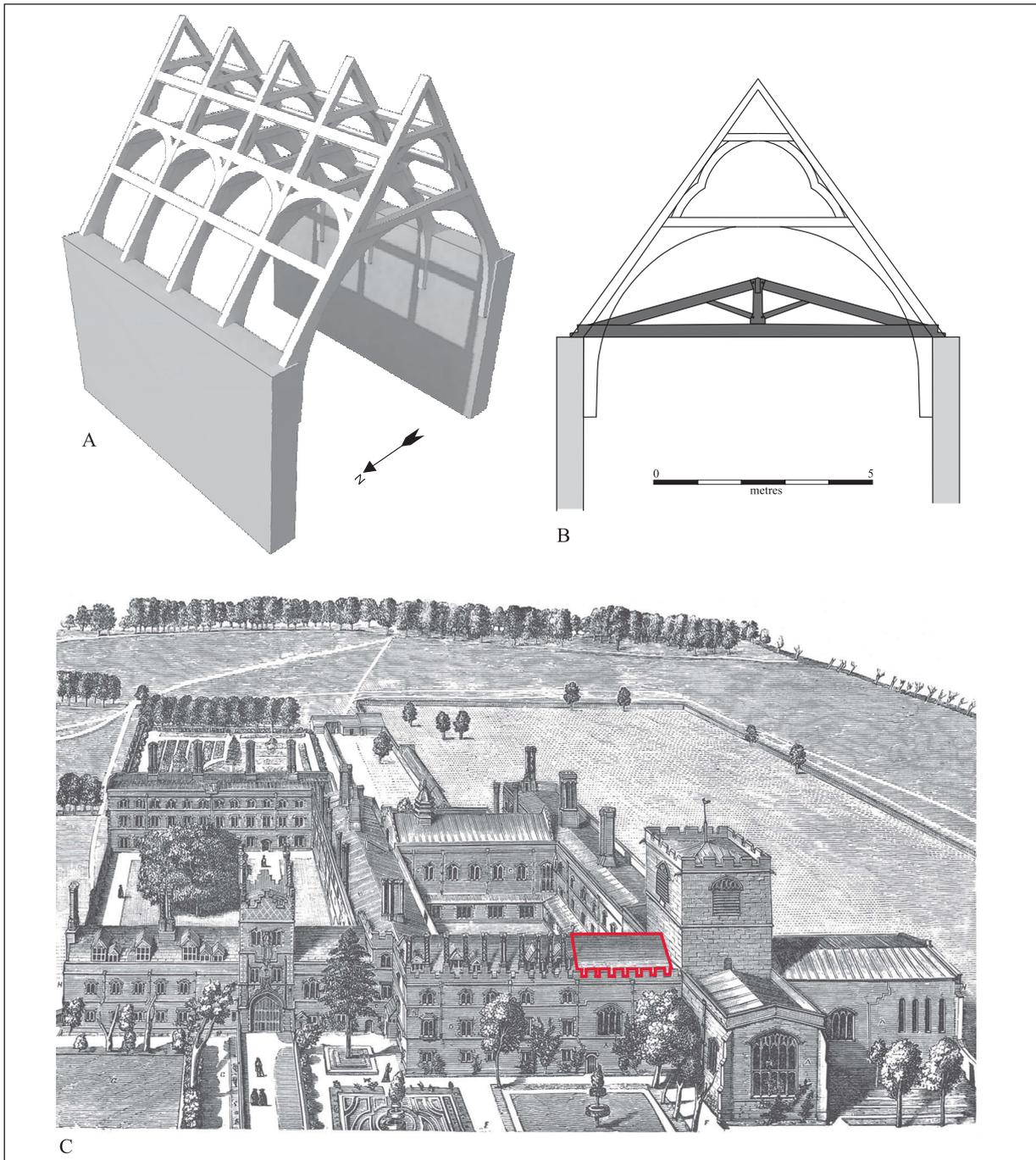


Figure 9. 3-D reconstruction of Group 1 roof (A), with comparative elevation showing both the reconstructed and extant structures (B) and Loggan's 1690 engraving of Jesus College (C).

Group 2 timbers represent purlins that were derived from a different, although broadly contemporary, source. This was most probably a steeply-pitched roof situated elsewhere within the college.

Group 3: In contrast to the preceding groups, aside from the truncated remnants of a pre-existing numbering sequence, no distinguishing joints or other pertinent details were visible on any of the Group 3 timbers. Although it is therefore likely that all 96 common rafters were composed of recycled material derived from a single common source, this could

not be determined with certainty. Similarly, the original purpose of the timbers is also unclear. Had they comprised reused common rafters that were previously employed within either the Group 1 or Group 2 roofs, they would be expected to have been tapered in form (Rackham 1980, 146). Their lack of tapering implies that they were instead derived from another source. Perhaps the most likely scenario – given their size, regularity and quantity – is that they were initially used as studs (vertical members) within a framed wall. Such a feature, or features, might well have been demolished as part of the same episode of widespread demolition/conversion that

led to the dismantling of the aforementioned roofs.

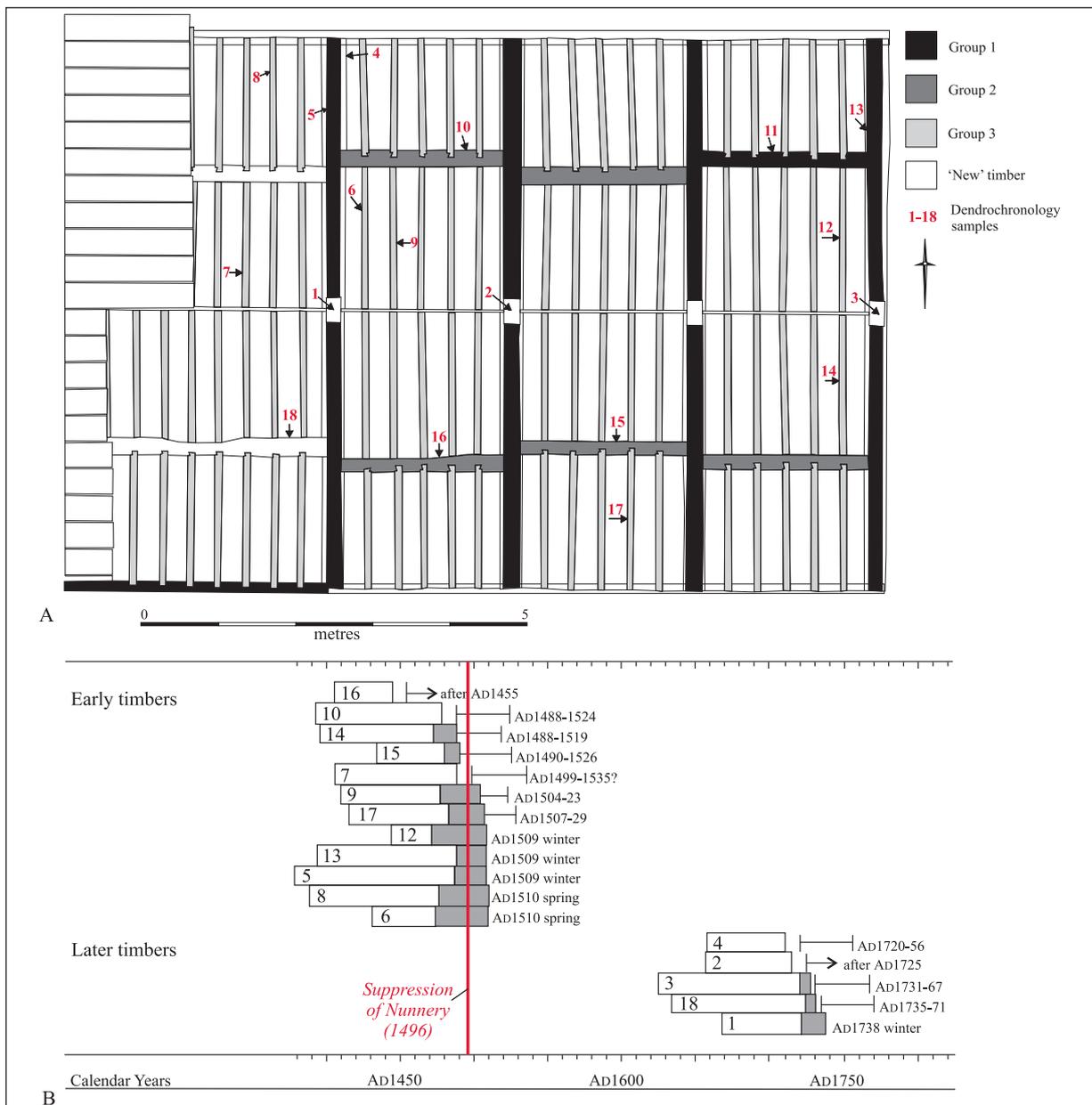
Dendrochronological Analysis

Eighteen timbers from the roof were selected for dendrochronological analysis, conducted by Ian Tyers (whose full report is in Dickens *et al.* 2007). The samples included timbers derived from all three reused groups, as well as fresh elements created specifically for the extant king post truss structure (Fig. 10A). They comprised three king posts, one tiebeam, two principal rafters, five purlins and seven common rafters. Although one sample contained an unmeasurable sequence, the remainder included six that were complete to the bark-edge and a further six that retained significant quantities of sapwood. Following their measurement, all of these series were found to cross-match and two separate groups were

apparent. A composite series was constructed from each group of correlated samples. One group of twelve timbers formed a sequence of 131 years, whilst a second group of five timbers formed a group of 114 years. Each sequence was cross-matched with a large number of reference chronologies at a single consistent position. These correlations indicate that the rings in the first composite series date from AD 1379–1509 inclusive, and in the second to AD 1625–1738 inclusive. The dates of the individual samples derived by this process are shown in Figure 10(B).

The first sequence, dated 1379–1509, comprised samples derived from two principal rafters, three purlins and seven common rafters. Five of these had surviving bark-edge, and each was felled in the winter of 1509 or spring of 1510. Less precise felling date ranges could also be calculated for the

Figure 10. Location of dendrochronology samples (A), with diagrammatic representation showing the relative and absolute positions of the dated samples (B); white bars represent heartwood, shaded bars represent sapwood (the felling date, felling date range or terminus post quem date is also shown for each sample as appropriate).



other seven dated samples, which show that they are broadly consistent with the aforementioned timbers. It should be noted that the distinction between winter and spring felling in this group may, in fact, be misleading in terms of the actual day of felling. A group of oak trees in the same location at around Easter always includes some trees that have begun the season's new growth whilst others are still dormant. Thus, timbers felled at this time of the year would be expected to include material with slightly different apparent felling dates.

The second sequence, dated 1625–1738, comprised samples from three king posts, a tiebeam and a purlin and includes a king post with surviving bark-edge. This timber was felled in the winter of 1738, and a second king post was derived from the same tree. The less precise felling date ranges calculated for the other three dated samples in this group are also consistent with this date. There were clear examples of seasoning distortions on the king posts and some of the purlins that can only have occurred after they were squared. This observation suggests that these elements of the framing were each prepared whilst their timbers were still green, effectively within a few weeks or months of their felling. It is thus reasonable to assume that initial construction of this structure occurred during or shortly after the winter of 1738.

The dendrochronological evidence provides a clear context for the reconstructed Group 1 roof. Erected during or shortly after the spring of 1510, this structure comprised part of the extensive programme of works associated with the conversion of the former nunnery for collegiate use. Moreover, given the dimensions of the roof – allied with the location in which many of its constituent timbers were subsequently reused – there can be little doubt that it too was originally situated above the converted chapel nave (formerly the eastern four-and-a-half bays of the monastic nave); a space into which it fits precisely. This, therefore, almost certainly represents the steeply-pitched nave roof depicted in Loggan's 1690 engraving of the college (Fig. 9C). The print also reveals that the roof of the adjoining chamber block, now the east wing of the Master's Lodge, was of an identical pitch. Here, however, a series of dormer windows indicate that the attic space was put to residential use. This conjoining structure, which was very probably built concurrently with the chapel roof, provides much the most likely source for the additional, Group 2 reused timbers.

Internally, the newly discovered evidence demonstrates that the nave roof was open to the rafters, with decorated purlins facing down into the main body of the chapel. The structure may also have been painted, although no trace of colouring survived upon any of the reused timbers. One very unusual feature of the roof was the way in which the moulded parts of the purlins had been set into the bodies of the principal rafters (Fig. 11). This appears to have comprised an attempt to impart greater rigidity to the structure, a function that might more practically have been achieved by use of a diminished haunch (a particular design of tenon that helps to preserve the alignment of the members without unduly weakening the end of the mortise). Widely employed *c.* 1510–1700 (Hewett

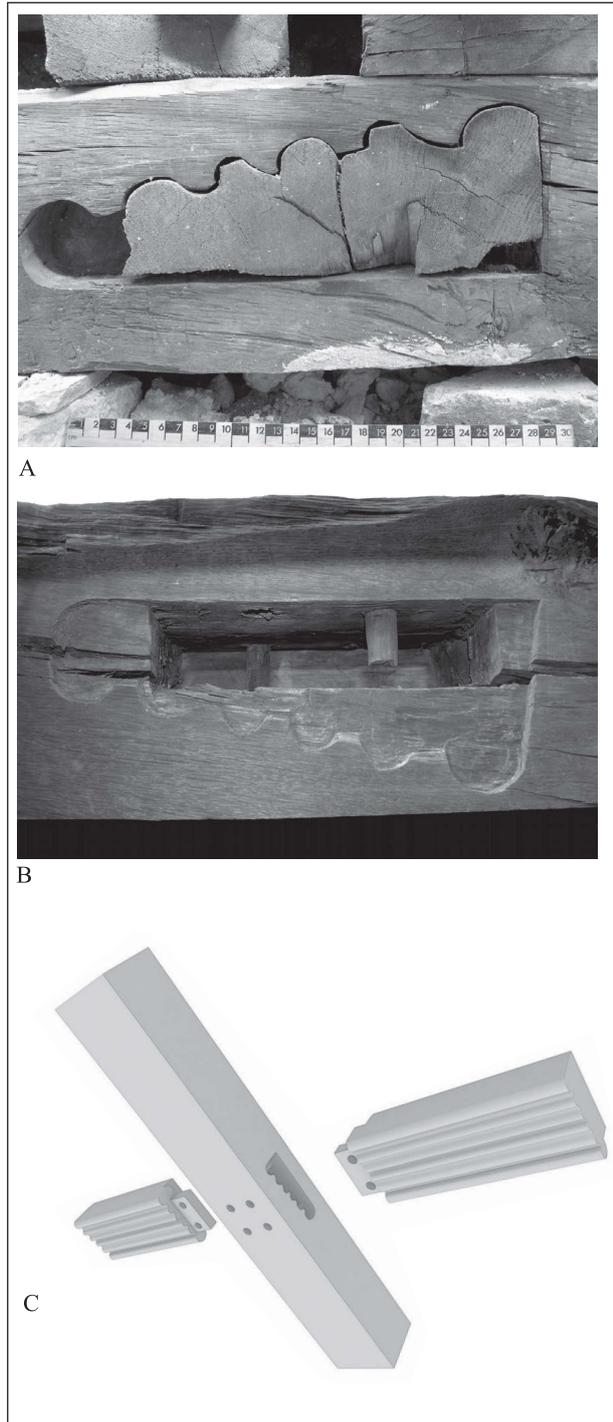


Figure 11. Joints of moulded purlins, showing; sawn-off remnant of purlin in situ (A); scribed and carved housing (B) and 3-D reconstruction of original arrangement (C).

1980, 215), the earliest use of this joint has been credited to the broadly contemporaneous roof of King's College chapel, Cambridge (see Woodman 1986, 221–2). More recently, however, its inception has been pushed back to *c.* 1500 or earlier at St. Aylotts, Essex (R. Darrah pers. comm.), thus rendering its absence

from the present structure all the more intriguing.

Upon completion, the steeply-pitched nave roof comprised only one element within a much broader, chapel-wide schema. Today, the only surviving *in situ* remnants of this design are the open timber roofs of the north and south transepts. These are both much lower in pitch than the former structure, and are sub-divided into three bays as opposed to four (Royal Commission on the Historical Monuments of England (RCHM(E)) 1959, 88–9). Moreover, in addition to moulded purlins that appear almost identical to those identified among the reused timbers, each of these roofs also contains moulded tie-beams, ridge boards and wall plates. Although relatively well-preserved, the roof of the south transept was restored and augmented in 1867 and both structures were also painted – or possibly repainted – during the 19th century. Nevertheless, it is clear that the transept roofs comprised part of the same overarching conversion-period design as the newly reconstructed nave roof.

The increased level of decorative moulding that appears to have been employed within the transept roofs may have been stimulated by their diminished height, which would have enhanced its visibility, but more probably formed part of a broader trend of increasing elaboration towards the chapel's east end; a common pattern during this period. Unfortunately, this interpretation cannot be confirmed with certainty because a number of requisite components of the nave roof – such as the collar beams, for example – were not represented amongst the reused timbers. Furthermore, the chancel roof, which should on this basis have represented the design's most elaborate constituent, is a later replacement, constructed between 1847 and 1849 to a design by A. W. Pugin. It is, however, reputed to have incorporated a significant proportion of the preceding low-pitched structure within its build (RCHM(E) 1959, 89).

The date obtained from the reused timbers also raises an additional issue. Previously, the process of converting the church from monastic to collegiate use is widely assumed to have been completed by c. 1500, when the first Fellows were admitted to the fledgling institution (e.g. Atkinson 1897, 396; RCHM(E) 1959, 86–8). Dendrochronological evidence, however, conclusively demonstrates that work upon the chapel remained ongoing until at least 1510. It thus appears that – in addition to the construction of the adjacent Grammar School and Gatehouse, which occurred in 1503–07 (Evans *et al.* 1997, 124–8) – work upon the new chapel also continued for at least a decade after the college's initial establishment. Moreover, this delay is also evinced by documentary sources that indicate that the conversion of the 'chapel and cloister' may not have been fully concluded until c. 1513 (Glazebrook 2007, 17). The disruption caused by these ongoing works thus appears likely to have had a significant impact upon the effective functioning of the new community in its earliest years.

Whilst the historical context of the initial conversion-period roof is clear, that of its successor – the extant nave roof, installed in winter 1738 or spring

1739 – is harder to establish. Although a thorough account of the numerous episodes of building work undertaken by the college has been published (Willis & Clark 1886 II, 115–86), much of which is based upon the surviving audit books, no mention is made therein of alterations conducted during the relevant period. Nevertheless, archaeological evidence reveals that extensive works were most probably conducted within the east wing of the Master's Lodge c. 1736–38.

Alterations undertaken to the upper storey of the chamber block at this time appear to have led to the dismantling of the pre-existing roof, with its dormer windows, and the concomitant replacement of the conjoining structure above the chapel nave. Furthermore, these works are also likely to have included the removal of several conversion-period stud-built partition walls. Given their precise contemporaneity to the dismantled roofs, it is likely that these, too, were situated within the western portion of the former chapel nave. Additional evidence of this episode of widespread alteration is provided by the presence of several extant 18th century features. Firstly, two of the principal staircases within the east wing, which are located upon the ground and first floors respectively, date to this period. Each has close strings and turned balusters, though the position of that situated on the ground floor was altered during the late 19th century (RCHM(E) 1959, 96–97). In addition, a number of second floor bedrooms also have 18th century fielded panel doors along with contemporary flat-moulded masonry fireside surrounds. It thus appears likely that all of these elements were installed c. 1736–38 and as part of a broader programme of alteration/modernisation.

What might have prompted such an extensive, and otherwise undocumented, episode of rebuilding? Historically, during the period 1701–52 the Master of Jesus College was Dr Charles Ashton, a noted scholar and divine (Taylor 2007). In addition to his collegiate position, Ashton was also collated to a prebendal stall in Ely Cathedral in 1701 and elected vice-chancellor of the University in 1702. Under his aegis, extensive alterations had already been made to the west wing of the Master's Lodge in 1718–20. This included the addition of a third storey to the structure and associated reroofing, as well as probable refenestration (RCHM(E) 1959, 96–7). Although the cost of this reconstruction was partially defrayed by a legacy, Ashton noted that "the remaining sum of £166 16s. 9d. I paid out of my own money" (Willis & Clark 1886 II, 167; emphasis added). If this pattern of private sponsorship were to have continued, or even expanded, during the succeeding three decades of Ashton's mastership, few if any of the resultant expenses would necessarily have been entered within the official college audit books.

Regardless of the precise provenance of the funding for these alterations, it is clear from their surviving remains that they were conducted to a very high standard. The new roof, for example – which followed a design of king post truss that had first been introduced into Britain during the 17th century

(Yeomans 1992, 30; see also Price 1733, plate G) – was of excellent quality. Fresh English oak, sourced from southeast England, was employed in its construction at a time when imported oak or pine was much more commonly in use. Moreover, many of the reused timbers were carefully reshaped and tapered to fit in their new positions, despite the fact that – being re-employed within a closed roof – they would no longer have been visible from below. Indeed, such was the quality of its execution, when a new panelled ceiling – decorated by William Morris & Co. – was installed in the nave in 1867, few if any alterations were required to the pre-existing structure (cf. RCHM(E) 1959, 89).

Discussion – *Splendid Rooms*

Although limited in scale, the investigations reported upon above have produced a number of significant results. In the first instance, additional information pertaining to both the form and position of the Medieval east range, as well as evidence of a contemporary ancillary timber-built structure, has been recovered. Further details of the former nave-aisle arcade within the monastic church were also revealed. Moreover, relating to the succeeding collegiate period, the initial

design of the chapel nave roof has been reconstructed and an extensive, though previously unrecognised, mid-18th century episode of reconstruction/modernisation within the east wing of the Master's Lodge has also been identified.

Yet, the outcome of these projects look forward as well as back. Within the chapterhouse, for example the College can feel rightly proud of the end result of the recent conversion programme. The Unit's 1995 discoveries there were, to all intents and purposes, boarded up and put on hold for 15 years. Now, through a private benefaction, and the skills and sensitivity of Donald Insall's architect, Matthew Seaborn, today the finished rooms are both a beautiful and extraordinary space (Fig. 12). Through panes set within the floor, crucial chapterhouse architectural features can be appreciated. By this, and the opening up of the wall behind Cloister Court's nunnery arcade, the works have managed to do justice to both the chapterhouse and Alcock's early college room-conversion. Certainly, it is no mean feat to simultaneously convey a sense of the main phases of successive historical buildings when their floor levels lie upwards of 0.75m apart. To this should equally be added that the Romanesque doorway, also found in '95, has been restored and again gives direct access to the chapel.

Set against the due celebration of these new rooms,

Figure 12. Top, the completed chapterhouse (now meeting room) restoration, facing west (left) and, right, east (note key chapterhouse-component viewing holes in floor; photographs © Tim Soar); below, during renovation works (see Evans et al. 1997 for relevant elevations).



the College's greater archaeological potential should not be lost sight of. Not only does this relate to its immediate institutional place-history, but, more generally, that it saw the succession of what were essentially gender-exclusive communities. Indeed, having a nunnery (female) replaced by a late Medieval college (male) is an extraordinary legacy. It is one without obvious parallel and, as such, is certainly worthy of further serious research investment.

Note

1. Two additional investigations have not been included within this listing. Situated some distance to the northwest, on the perimeter of the college grounds, these excavations occurred at the Maintenance Workshop and Gardener's Compound site (Hattersley & Evans 2003; Evans & Williams 2004). Here, numerous features of Iron Age and Roman date were uncovered. As they bear no relation to the Medieval and subsequent phases of occupation that comprise the focus of the present paper, these will instead be considered within a separate publication (Evans in prep.).

Mention should also be made that the full 'grey literature' reportage of all of these investigations is available through the Archaeological Data Service's digital archive (<http://archaeologydataservice.ac.uk/>).

Acknowledgments

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Huntingdon Street, St. Neots: from Medieval Suburb to Early 20th Century Household

Craig Cessford and Alison Dickens

with Martin Allen, David Hall, Vida Rajkovača and Anne de Vareilles

Excavations on the eastern side of Huntingdon Street, St. Neots, revealed a sequence of fluctuating occupation spanning the 11th–early 20th centuries. A roadside ditch along Huntingdon Street was established around the 11th century and by the 12th century the area was divided into a series of long narrow rectangular plots fronting onto Huntingdon Street. These represent a suburban expansion of the town of St. Neots; this development thrived throughout the 13th–mid 14th centuries, before going into a period of prolonged decline with identifiable activity ending in the late 16th–early 17th century. Occupation began again in the mid 17th century and has continued until the present. Some early 20th century garden features produced substantial groups of material associated with the inhabitants of Cressner House. Overall, the excavations present a useful insight into the fluctuating fortunes of St. Neots and interesting information on a specific early 20th century household.

Introduction

An evaluation and excavation were undertaken by the Cambridge Archaeological Unit in advance of a cinema development on the site of the former Old Fire Station and Household Waste Disposal Site, located on the eastern side of Huntingdon Street, St. Neots, Cambridgeshire, on behalf of Turnstone Estates (Cessford 2011; Cessford 2012a) (Figs 1–3). Although a considerable amount of archaeological investigation has been undertaken in St. Neots, the only work in the immediate vicinity consists of a largely unpublished excavation at No.14 Huntingdon Street in the early 1960s (Tebbutt 1978: 281) and an unproductive evaluation at the Cedar House Car Park (Roberts 1997). In broad terms the site is believed to lie outside the Late Saxon settlement and on the periphery of the medieval town (Spoerry 2000), and it was hoped that its excavation would provide evidence for the fluctuating economic fortunes of St. Neots. Detailed feature descriptions and specialist information are presented in the grey literature report (Cessford 2012b), and as a result only the significant findings are presented here. The nature of the archaeological record means that this paper divides broadly into two rather disparate sections; a general 11th–19th century narrative and a

more specific early 20th century assemblage from a single household.

11th–early 17th century occupation and decline

Although small quantities of Prehistoric struck flint and Roman and Early/Middle Saxon pottery were recovered as residual material there was no evidence of occupation prior to the Norman Conquest. Then, in the late 11th century, a roadside ditch was established, running along the eastern side of Huntingdon Street (Fig. 4). It appears likely that this comprised the continuation of a feature that was previously identified in the 1970s lying to the north of the site at No.14 Huntingdon Street (Tebbutt 1978: 281). Occupation proper began in the 12th century, however, when a building (Building I) and a well (Well I) were constructed. By the 13th century occupation was well-established, with evidence for a series of long narrow rectangular property plots fronting onto Huntingdon Street. These plots were *c.* 65m long, with timber buildings beside the street frontage and yard areas behind where ancillary structures (Building B; Fig. 5), wells and other features were located. The area in the rear of the plots to the east was given over to horticulture and other activities, few of which have left any archaeological trace apart from sporadic gravel quarrying. One quarry pit (Pit I) is particularly significant as it contained a silver penny that was in circulation *c.* 1244–1250 and is likely to have been deposited around that time. Pit I also contained a buckle plate (Fig. 6.1) and some ceramics including Brill/Boarstall ware and Lyveden/Stanion ware, which can be closely dated by association.

The pottery from the site indicates a marked decline in occupation from the early/mid 14th century onwards. All the buildings were demolished and the only evidence for continued occupation comprises a few gravel quarries and other pits, dating mainly to the late 15th–early 16th century, plus the continued use of one of the wells (Well II; Fig. 7). A bunghole cistern with a complete skull of a horse aged 9–11 years lying directly on top appears to have been deliberately placed in the base of one of the quarry pits for some

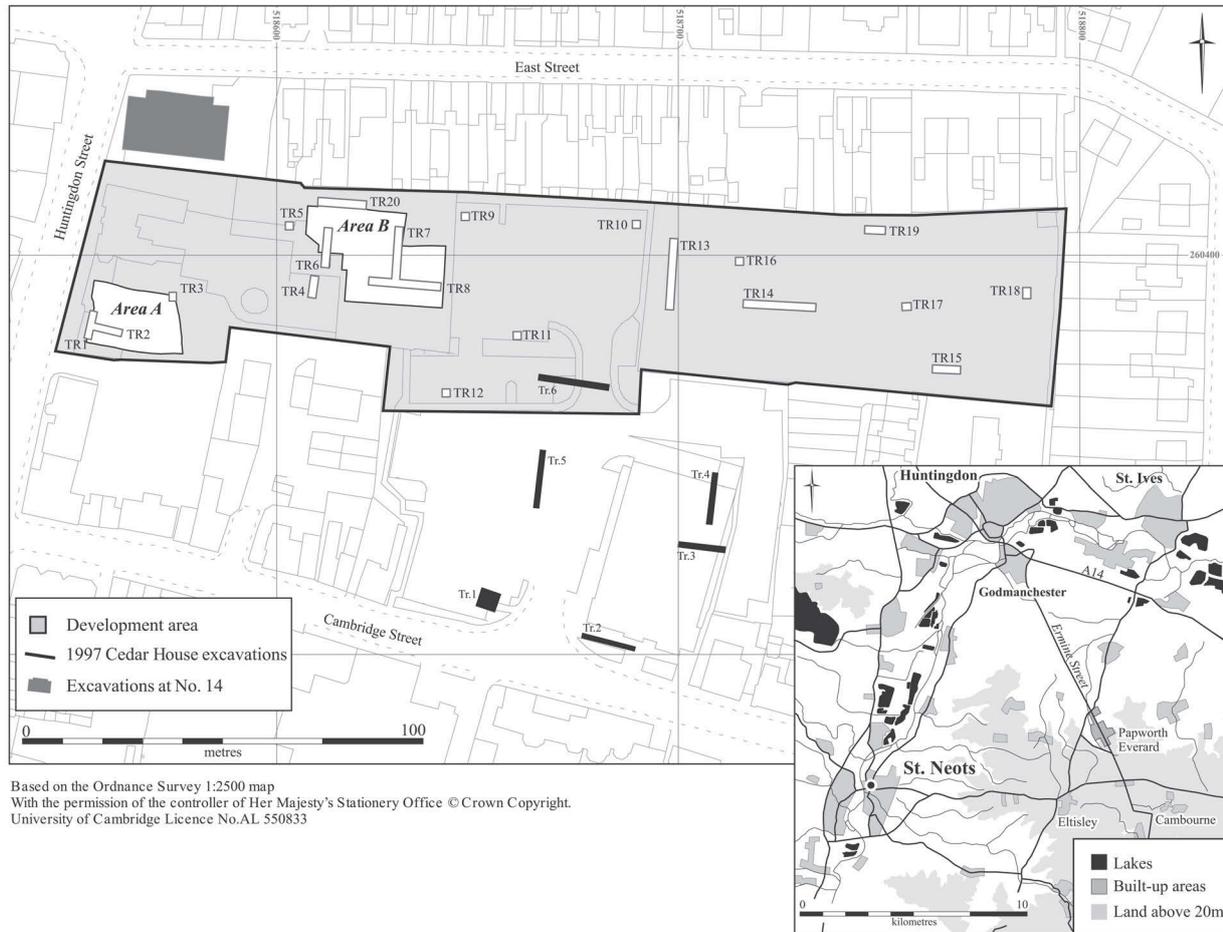


Figure 1. Location map and site plan.

reason (Pit II; Figures 7.1 and 7.3). Well II finally went out of use in the late 16th–early 17th century, its back-fill being dated by a jetton produced c. 1586–1635. This marks the final cessation of the lingering remnants of the medieval occupation, as by this time the area was largely given over to a series of open strip fields.

Finds and environmental evidence

Coins and jetton

Martin Allen

Two medieval silver coins were recovered. Pit I produced a Henry III (1216–72) silver penny of Short Cross class 8b3 (Mass class 8c) (Mass 2001, 61–62), minted by the London moneyer ‘Nichole’ (Nicholas of St Albans) in c. 1244–1247. This penny was probably deposited between c. 1244 and the end of the recoinage of 1247–1250, which replaced the Short Cross coinage of 1180–1247 with Henry III’s new Long Cross coinage. There was also an Edward I to Henry VII silver halfpenny, probably from the London mint, and of c. 1285–1488. This halfpenny was probably deposited no later than the debasements of the English coinage in 1544–1551, which eliminated most earlier silver coins from circulation (Allen 2005: 51–55), but was disturbed and

re-deposited in a mid 18th-century feature (Pit II). A copper-alloy Nuremberg jetton of the Rose/Orb type produced by Hans Krauwickel II (fl. 1586–1635), with the inscription *Das Wort Gotes Bleibt Ewick* (The Word of God is Eternal) on the obverse (cf. Mitchiner 1988: 435–436, nos. 1494–1503), was recovered from Well II.

Metalwork

Craig Cessford

The only noteworthy piece of metalwork was a typologically 13th–14th century copper-alloy riveted buckle plate decorated with an eight pronged starburst motif from Pit I (Fig. 6.1). Although this is a common artefact type it is significant as it was found in association with a silver penny that was probably deposited c. 1244–1250.

Pottery

David Hall

The medieval and Post-Medieval pottery assemblage consists of typical fabrics and forms for the period (Table 1). Some material including Brill/Boarstall ware and Lyveden/Stanion ware was found in Pit I — probably dating to c. 1244–1250 — providing useful dating evidence for the occurrence of these wares in

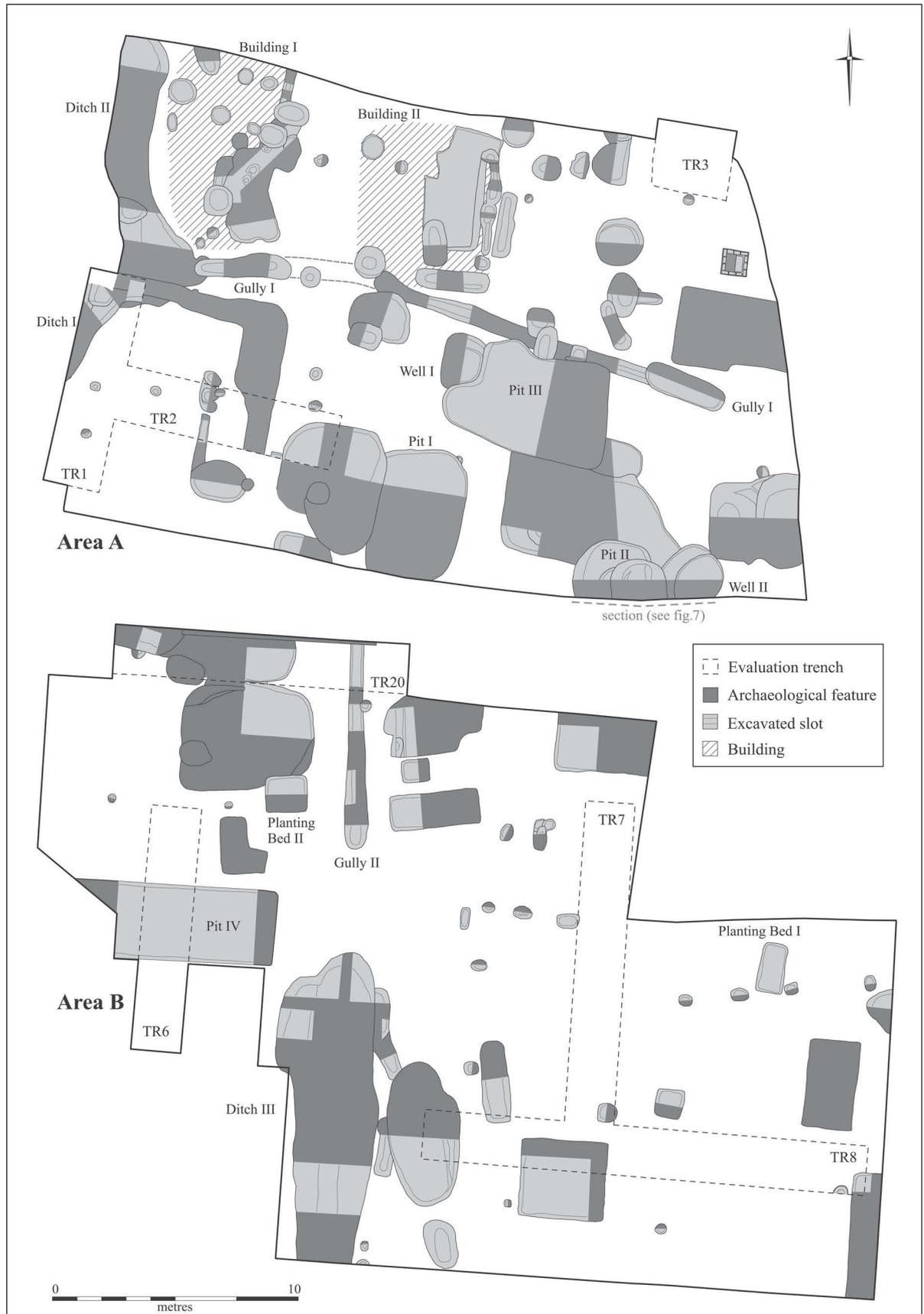


Figure 2. Plans of Areas A and B.



Figure 3. Photographs of excavation areas; upper Area A facing northwest, lower Area B facing southwest.

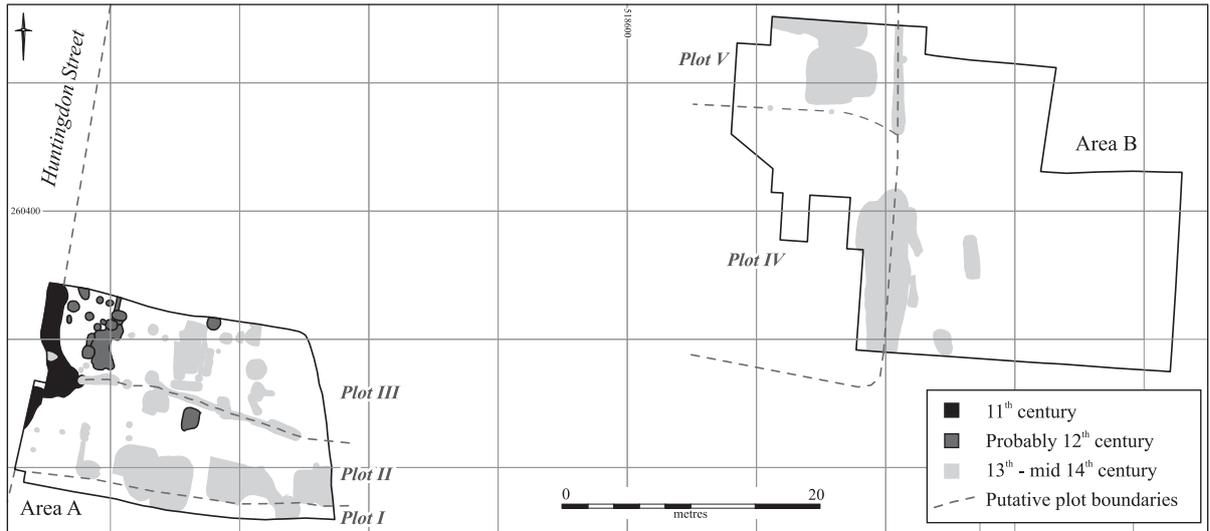
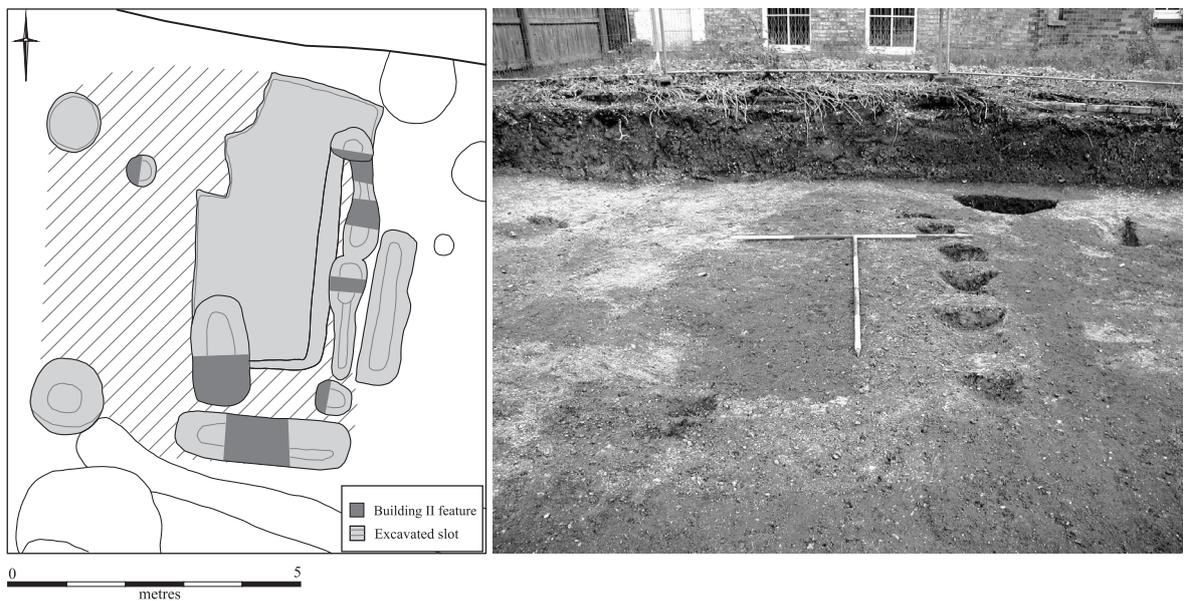


Figure 4. 11th – early 17th century features.

Figure 5. Building II, plan of structure and photograph facing north.



Fabric	Count	Weight (g)	MSW (g)
Thetford-type	17	213	12.5
St. Neots-type	86	748	8.7
Stamford	4	123	30.8
10th–12th century total	107	1084	10.1
Miscellaneous coarsewares	516	6811	13.2
Shelly coarsewares	147	1572	10.7
Thin bodied rilled greyware	14	159	11.4
Brill/Boarstall	35	1016	29.0
Developed Stamford	3	12	4.0
Lyveden/Stamion	13	127	9.8
Potterspury	4	29	7.3
Miscellaneous finewares	3	35	11.7
13th–15th century total	735	9761	13.3
Plain greyware	79	2801	35.5
Plain redware	22	284	12.9
Glazed red earthenware	16	279	17.4
Iron glazed ware	12	180	15.0
Frechen stoneware	3	125	41.7
Raeren stoneware	4	114	28.5
Staffordshire-type slipware	3	38	12.7
Miscellaneous wares	11	639	58.1
16th–17th century total	150	4460	31.9

*Table 1. Overall 10th–17th century pottery assemblage.
MSW= Mean Sherd Weight*

St. Neots. Other notable discoveries include a distinctive thin bodied greyware with horizontal rilling and in one instance a vertical thumb impressed stripe. This fabric dates to the 13th century and the only recognisable form was a globular jar (Fig. 6.2). There was also a significant proportion of a Brill/Boarstall ware jug, which had been reused as packing in a posthole of Building I (Fig. 6.3; compare McCarthy and Brooks 1988: 294 no. 1076). The only significant Post-Medieval pieces came from late 15th–early 16th century Pit II, they consisted of most of a Late Medieval Reduced Ware bunghole cistern, probably from Higham Ferrers (Hall 1974: 55–57, no. 244; Hardy and Charles 2007: 70–81, 100–12) (Fig. 7.1) and a cup in a fine pink fabric and a dense green glaze with two handles on one side (Fig. 7.2). The grey ware cistern is of interest because of the complete profile. Although bungholes are often present in assemblages the complete bung-hole jar/jug forms are frequently elusive. For a recent discussion of Late Medieval reduced wares in the region see Slowikowski 2011.

Animal bone

Vida Rajkovača

The medieval and Post-Medieval animal bone consists of the typical species for sites of this period. It is composed almost entirely of domestic species, with a few possible wild bird species. A number of groups of animal bones were either deliberately placed or deposited as groups. These include a cow skull placed in the terminal of part of Ditch II in the 13th–14th century, a partial chicken in a 14th century posthole which may represent the remains of meal, a dog in a 15th century pit and a horse skull in late 15th–early 16th century Pit II (Fig. 7.3). In the late 16th–early 17th century two pigs were deposited; a foetal or neonate animal in Well II and a juvenile animal aged less than

a year in Ditch III, indicating pigs were raised on site.

Plant remains

Anne de Vareilles

Two 13th–14th century deposits contained well preserved and plentiful charred plant remains, though these consisted solely of assemblages of crops commonly found in medieval settlement sites. Free-threshing wheat (*Triticum aestivum* sl.) dominated both assemblages, with hulled barley (*Hordeum vulgare* sl.) and oats (*Avena* sp, possibly wild) also present. A few straw nodes and free-threshing wheat rachis nodes were recovered from one of the deposits. The wild plant seeds were dominated by vetches and/or wild pea (*Vicia/Lathyrus* sp.); other weed types included field gromwell (*Lithospermum arvense*), knapweed (*Centaurea* sp.) and grain-sized grass seeds. From this it can tentatively be suggested that the crops were grown on relatively poor well-drained non-clay soils.

Mid 17th–mid 19th century reoccupation

The stage at which the area was re-occupied is rather ambiguous and in part revolves around issues of definition. The recent investigations revealed no features dating to between the early 17th century and the mid-18th century, although the presence of several clay tobacco pipes of c. 1660–1680 in residual contexts indicates some level of activity. One crucial issue is the dating of Cressner House (No.12 Huntingdon Street) and No.14 Huntingdon Street, located a short distance to the north of Cressner House. The Royal Commission survey recorded No.14 Huntingdon Street as a 17th century two storey timber-framed building, to which a barn was added in the 18th century (Royal Commission on the

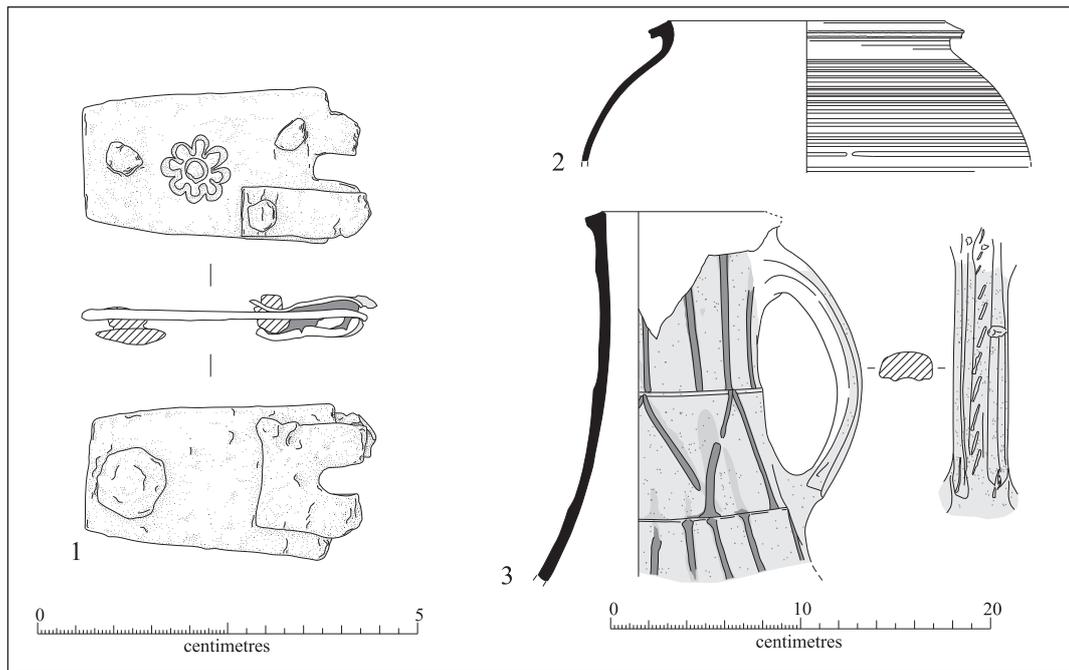


Figure 6. 13th–16th century artefacts.

- 1) 13th–14th century decorated copper-alloy riveted buckle plate from Pit I
- 2) 13th century fine greyware rilled globular jar
- 3) 13th–mid 14th century decorated Brill/Boarstall jug from posthole of Building I

Historical Monuments of England — RCHM(E) — 1926: 228). No.12 Huntingdon Street was omitted entirely, indicating that they believed it to be no earlier than the 18th century. After the demolition of No.14 Huntingdon Street and building works at Cressner House in the 1960s these were both re-interpreted as fine 16th-century or earlier double cross wing timber-framed country/farm houses (Tebbutt 1978: 122–24, 279). This dating has been questioned and it has been suggested that Cressner House is in fact of 17th century origin (Young 1996: 56, Figs. 64–65). This later dating appears more likely and would accord better with the other early buildings in this part of St. Neots, as well as the evidence of the clay pipes.

The evidence from the buildings suggests that the site began to be re-occupied in the mid 17th century, but that at this time the area formed an agricultural fringe on the edge of St. Neots with farm buildings located along the eastern side of Huntingdon Street. This is the situation depicted on the earliest reliable map of the area, the draft enclosure map compiled in 1770 (Huntingdon Libraries and Archives map 352a/A7831). The cartographic evidence indicates that whilst the western side of Huntingdon Street was relatively densely occupied and effectively urban in character, the eastern side was less built-up until well into the 19th century. The only 18th century archaeological features were a single large gravel quarry (Pit III) and two rows of postholes with clay packing that relate to fence lines (Fig. 8). This is consistent with the area still being predominantly agricultural in character.

Cressner House was occupied by the Leightonstone

family (1770–1814). They sold it in 1814 to Lt. Col. Humbley, who served (1807–1854) with the Rifle Brigade, and although he sublet the building he was probably responsible for it being rebuilt as the current two storey brick structure. In 1814, as well as Cressner House the property included a substantial close of pasture to the east with one acre and 2 roods (c. 6070m²), plus a toft and barn covering 2 acres, 1 rood and 24 perches (c. 9122m²) (Tebbutt 1978: 279). The property was still predominantly agricultural in character, although by the mid 19th century the occupation of Cressner House itself was separate from the agricultural activities taking place on the rear of the plot to the east.

Finds and environmental evidence

Clay tobacco pipe Craig Cessford

Only a small assemblage of clay tobacco pipe was recovered, mainly from the large gravel quarry Pit III. This produced two noteworthy bowls; one of c. 1660–1680 has a depiction of a mulberry tree on both sides of the bowl. This was a common form of decoration locally and other examples are known from St. Neots (Addyman and Marjoram 1972: 189). The second bowl was of an unusual form, with an upright bowl and splayed heel and the initials RL on the upper side of the stem near the bowl (Fig. 9). There is no evidence for clay tobacco pipe manufacturing in St. Neots prior to the mid 19th century and the nearest 18th century

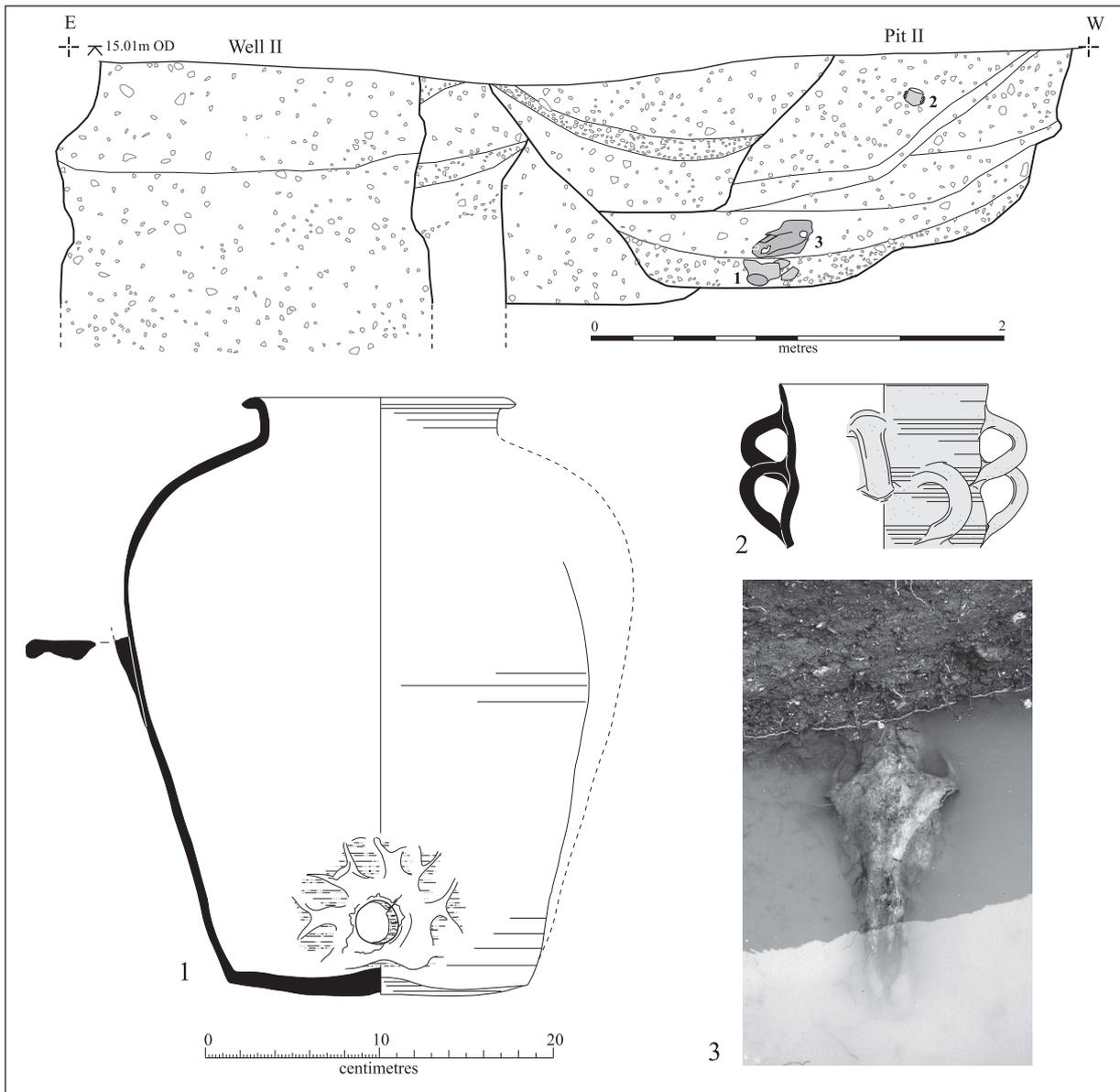


Figure 7. Section of Well II and adjacent quarry Pit II, with illustrations of:

- 1) Late 15th–early 16th century bunghole cistern with handle, Late Medieval Reduced Ware probably Higham Ferrers ware
- 2) Cistercian form cup with two handles on one side in pink fabric with dense green glaze
- 3) Photograph of horse skull, facing south.

production centre was St. Ives, where manufacturing began in the 1720s (Cessford 2001). The most likely candidate for producing the bowl marked RL is Richard Lewis of St. Ives. The earliest evidence for the family being present in St. Ives is the baptisms of the children of Richard and Mary Lewis in 1734–1750. Richard Lewis himself died in 1760. An advert in August 1747 offered a dwelling house and pipe office in St. Ives ‘now in the occupation of Richard Lewis’ for let, as well as ‘All sorts of Utensils in the Pipe making way are to be sold, at a reasonable Price; being determined to leave off Trade’ (Moore 1987: 27).

Early 20th century gardening

(Incorporating information from V. Rajkovača)

In the early 20th century there was evidence for a considerable amount of activity to the east of Cressner House. This occurred in an area lying immediately to the east of what appear to have been ornamental gardens, in a space which is best interpreted as a kitchen garden for growing vegetables and flowers. Here, six features interpreted as planting beds were identified, plus a number of postholes and a pit dug to dispose of a dog. Two of the planting beds (Planting Beds I–II) are noteworthy because they contained considerable



Figure 8. Mid 18th–early 20th century features, with early 20th century features overlaid on 1885 Ordnance Survey map.

groups of animal bone in their bases, presumably as ‘percolation’ fills to aid drainage (Fig. 10; Table 2). The nature of the material suggests that the assemblages were derived from single households – rather than representing communal disposal – and a number of pronounced similarities indicate that this was the same household, which had presumably occupied Cressner House. The two assemblages are broadly contemporary, although they may have been separated by a few years. Whilst the assemblages provide a detailed insight into aspects of the household that generated them it is one that will be affected by decisions concerning what to discard and what to retain, themselves influenced by a range of factors including value and worth, both monetary and emotional.

Manufacturers’ names on glass bottles indicate that the larger group (Planting Bed I) must have been

Table 2. Summary of material from Planting Beds I and II. MVC = Minimum Vessel Count

Material	Planting Bed I Count	Planting Bed I weight (g)	Planting Bed I MVC/MNBU	Planting Bed II Count	Planting Bed II weight	Planting Bed II MVC/MNBU
Pottery	279	9043	45	250	8492	52
Glass	187	5466	39	25	776	12
Animal bone	504	6579	25	1	8	1
Metal	5	296	4	30	350	3
Worked bone	4	127	4	0	0	0
Leather	2	120	1	0	0	0
Total	981	21631	118	306	9626	68

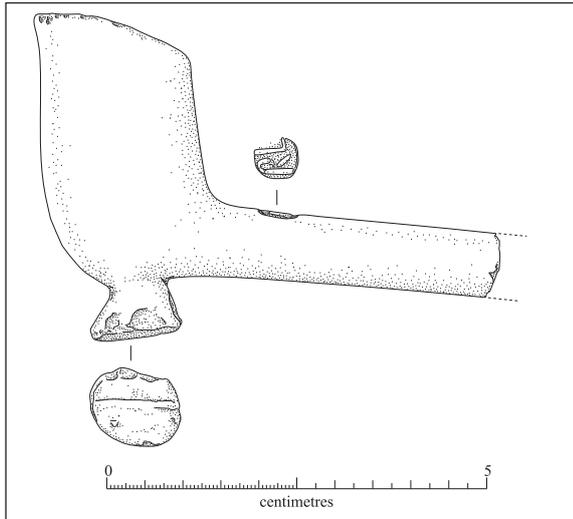


Figure 9. Clay tobacco pipe with initials RL on upper side of stem near bowl from Pit III.

deposited after 1901 and that some bottles were produced no later than 1913. During this early 20th century period Cressner House was occupied by at least six tenants/owners and there is no way to determine with absolute certainty which household the assemblages relate to. The presence of a military cap badge makes a date for the deposition of the assemblage during or relatively soon after the First World War more probable. As this cap badge of the Civil Service Rifle Volunteers does not relate to a local Huntingdonshire regiment it can be tentatively linked to a particular individual with local connections (Fig. 10.1). This is a die struck badge in the form of a garter with two loops on the rear for attachment and a blank c. 23mm central circular area with two piercings, suggesting that a piece of cloth or similar material was attached with thread. This form of attachment is rare after 1903 and the cap badge is not of the common form for the regiment in World War One (cf. Doyle and Foster 2010: 32–34, 131). The most likely explanation for this unusual form of badge is that it was used briefly at the start of World War One, when the massive recruitment drive of volunteers for ‘Kitchener’s Army’ placed strains on supplying equipment. It is even possible that the badge represents use of some pre-1903 cap badges that had not been generally distributed but lain abandoned in storage for over a decade.

The 1/15th (County of London) Battalion (Prince of Wales’s Own Civil Service Rifles) was recruited from London, rather than Huntingdonshire. It was mobilised in 1914 and landed at Le Havre in 1915, becoming the 140th Brigade in 47th (2nd London) Division in May 1915 (Anon 1921; Knight 2004). The only individual serving with the Civil Service Rifle Volunteers during World War One with an identified link to St. Neots is Private Edwin W. Harvey who was killed in action on 15th September 1916 and buried at the Caterpillar Valley Cemetery Longueval in the

Somme region of France. Private Harvey died during the Battle of Flers-Courcelette, part of the Battle of the Somme, in which his division captured High Wood with ‘huge losses’ and ‘wanton waste’ with 80% of its soldiers killed or wounded and the loss of 15 officers and 365 other ranks over four days (Anon 1921: 111–17; Knight 2004: 80–90). His tombstone records that Private Harvey, service no. 4172, was born in London c. 1890 and describes him as the only son of Mr. and Mrs. E. W. Harvey, of No.1 Kia Ora Cottages, Rycroft Avenue, St. Neots, Huntingdonshire.

Although Edwin Waby Harvey had been born in London (c. 1853) and lived there most of his life his wife Mary Ann Catling (born c. 1850), whom he married in 1880, came from the St. Neots area and probably belonged to a family from Hail Weston. When Edwin Waby Harvey retired in c. 1910 they moved to Belton Villas, Hail Weston, St. Neots. In the 1911 census Edwin Harvey junior was recorded as a commercial clerk living at 33 Barclay Road, Leightonstone. Edwin Harvey senior outlived his son by several decades, with his death registered in St. Neots in 1942.

Cressner House had been owned since 1899 by a John Franks, who retired to live there in 1916 until his death in 1920 (Tebbutt 1978: 281). The property was then occupied by Hannah Franks, probably John’s daughter, who had been born at Eaton Socon in 1864. Hannah, who was described as a dealer in antique furniture in the 1901 census, married, in 1920, widower Albert Harvey, who was probably born in St. Neots in 1872. Albert Harvey died in 1932 and his wife Hannah died in November 1937.

As far as can be determined there was no familial relationship between Albert Harvey and Edwin Harvey senior and junior. Although one is not impossible it is likely that the matching surnames are coincidental. This renders the presence of the cap badge difficult to explain although it is possible that there was some link between the either the Franks or Harvey families and the Catlings, in which case the cap badge may have been some form of treasured memento. Such items occasionally occur in assemblages dating to and just after the World War One, which have no other military associations (Cessford 2012b: 797). In this context one explanation for the unusual rather old-fashioned form of the cap badge is that Edwin Harvey was issued with an up-to-date version at some point, and the older and now surplus badge was given to a family member.

In addition to the cap badge there are several interesting aspects of these assemblage(s). Unless stated otherwise, the specific items discussed derive from the larger group (Planting Bed I). There is a strong emphasis on middle class values and activities such as tea drinking. At least five different tea drinking services are represented. These are mostly highly decorated and colourful and two of them were also represented in the smaller group. In several instances the services simply consisted of a single matching tea cup and saucer. One rather plainer service with a gilt tea leaf design (Minimum Vessel Count (MVC) six) had two teacups and matching saucers plus a serv-



Figure 10. Photographs of early 20th century Planting Beds I–II, facing south, and examples of material culture from them:

- 1) Cap badge of the Civil Service Rifle Volunteers
- 2) Cat figurine
- 3) Fragments of a porcelain doll
- 4) Fragments of black transfer printed Adriatic pattern dining vessels with monogram that is a combination of C, R, S and &.

ing dish and a side plate, suggesting that this was the service typically utilised for afternoon tea when more than one person was present. Another hand-painted, multicoloured floral design with red flowers (MVC four) included at least two teacups, a side plate and a cup probably for coffee. This was presumably a breakfast service.

The more colourful and highly decorated of the tea services can be defined as bric-à-brac (cf. Mullins 2011: 34–35; Mullins and Jeffries 2012) and there are several other items with similar overtones, particularly a large figurine of a cat wearing a jacket and top hat and holding a cane with a container on its back, possibly for flowers (Fig. 10.2). The female presence is confirmed by a pair of ladies leather shoes with wooden heels and metal fittings and at least four perfume bottles. There is also strong evidence for children, including the head and arms of a porcelain doll (Fig. 10.3), a matching toy cup and saucer and a multicoloured rubber ball. There are ten pharmaceutical bottles in the assemblages, the only identifiable product was a complete bottle for Owbridge's Lung Tonic in the smaller assemblage. This was a patent medicine that Walter Thomas Owbridge began to produce in c. 1874 in Hull; it continued to be popular well into the 20th century. It was supposedly a cure for 'all affections of the chest, throat and lungs', including asthma and tuberculosis.

The colourful tea services contrast with two rather different black transfer-printed dining services on ivory-dyed ceramic bodies. One, named the Adriatic pattern (Fig. 10.4), was found in both assemblages (MVC three and two respectively) while the other, found only in the smaller assemblage, incorporated a pineapple in its design (MVC three). These are both asymmetrical Japanese-influenced Aesthetic-style patterns (cf. Majewski and Schiffer 2009: 201–05), a pervasive but relatively short-lived style that must have been manufactured c. 1864–1907, with a pronounced peak of production of c. 1882–1888 (Samford 1997: 19, table 1, Fig. 17). These Aesthetic-style pattern dining services were c. 30–60 years old when deposited. Ceramic tablewares of this period typically have a lifespan from production to discard of 15–25 years, although some items do survive for over 30 years (Adams 2003). This time-lag between manufacture and deposition suggests that the dining services were probably distinctly old-fashioned by the time they were thrown away. This contrasts with the tea services, which all appear to have been of more recent manufacture. There were also four near identical plain scale-tanged worked bone handles. These are cutlery handles and a three pronged iron fork head may well have been associated with one of the cutlery handles. The discard of this number of handles is atypical of other assemblages of this period excavated locally (Cessford and Dickens in prep); it may possibly relate to such items beginning to be manufactured in plastic on a significant scale after the patenting of Bakelite in 1907 and more especially the improvements in chemical technology during World War One.

Planting Bed I contained a significant quantity of animal bone. In total there were 237 assessable specimens — those fragments which could be identified to some degree and counting refitting fragments as one — weighing 6570g, which represented a common range of species (Table 3).

Table 3. Number of Identified Specimens (NISP) and Minimum Number of Individuals (MNI) for all species from Planting Bed I; the abbreviation *n.f.i.* denotes that the specimen could not be further identified. Although some bones can only be identified to species or general size they have been combined in the tables where identifications appear overwhelmingly likely.

Taxon	NISP	%NISP	MNI
Cow (+ cattle-sized)	46 (44+2)	19.4	1
Sheep (+ ovicapra + sheep-sized)	122 (22 + 68 + 32)	51.5	10
Pig	4	1.7	1
Rabbit	33	13.9	2
Chicken (+ Galliformes)	12 (10 + 2)	5.1	2
Goose	5	2.1	1
Anseriformes (goose or duck)	4	1.7	
Cat	1	0.4	1
Bird <i>n.f.i.</i>	10	4.2	-
Total	237	-	18

The bone was all in good condition and there was no evidence of any gnawing, indicating that it was rapidly covered or buried so that dogs and rodents in particular could not access it. The bones are almost exclusively from species that would have been eaten, the lone exception being a cat metapodial fragment. Post-1750 animal bone is often not deemed worthy of archaeological attention (Thomas 2009: 20), although there are some notable exceptions (e.g. Fryer and Shelley 1997: 209, 214–15). Archaeologically this quantity of material is unusual, as after c. 1850 animal bone becomes extremely rare as a component in archaeological assemblages (Jeffries 2006: 286). This general absence may relate to changing attitudes of what represented 'dry and proper rubbish', plus possibly an increased use of animal bone mainly as agricultural fertiliser. Excavations on sites of this period frequently recover only small faunal assemblages (e.g. Casella and Croucher 2010: 70–72). For example, of the 18 substantial post c. 1850 artefactual assemblages from the Grand Arcade excavations in Cambridge, which were deposited into broadly comparable features, only seven contained any animal bone at all and these produced less than 200 fragments in total (Cessford and Dickens in prep). In contrast, Planting Bed I contained 504 fragments. Planting Bed II in comparison contained only a single chicken metatarsus, and this is much more typical of assemblages of the period. This rarity means that the recovery of a substantial early 20th century assemblage of animal bone from

Planting Bed I is extremely significant. Animal bone is also particularly significant as it is likely to have accumulated over a relatively short period immediately prior to deposition rather than being a mixture of material acquired over years or even decades as is clearly the case for ceramics and glass in this assemblage. As such it provides a much more temporally discrete group of material, especially as there is no evidence for the presence of residual material.

Skeletal element analysis showed that certain animals/types of meat were only represented with a restricted number of elements/joints. Coupled with this careful selection of meat joints was a high percentage of butchered material with cut, saw or chop marks (50.2% of the assessable specimens). No comparable values are available from other early 20th century British sites, however only 17% of the 19th century domestic animal bones from Stafford Castle bear such marks (Thomas 2011). Cattle were only positively identified based on a number of ribs and vertebrae (Table 4) (Wolsan 1982). These bones relate solely to the two beef joints that in American historical archaeology are considered the most expensive (Huelsbeck 1991: table 1) and the situation in Britain is likely to have been broadly comparable although research is still needed on this area. The most common species, sheep/ovicapra, were represented with bones corresponding to joints of relatively expensive meat and with a complete absence of skull and mandibular elements. The relatively expensive cattle and beef joints may indicate a well to do household, there is no particular evidence for this in the other material such as the ceramics and glass. This ceramics and glass deposited may, however, be biased as it is possible that more expensive items may either have been retained or sold and therefore not have entered the archaeological assemblage.

Pork was rarer and only eaten as ham hocks and legs from a single animal. Rabbits must have been brought in and prepared 'whole', and poultry consisted of chicken, represented by wings and feet, and goose, represented by a leg or two. Some bird bones could not be identified to species; these are all poorly preserved limb shaft fragments that in all likelihood are a mixture of chicken and goose. Although the bulk of the deposit was not sieved a considerable number of small bones were recovered and a ten litre environmental sample that was floated contained only a single fish bone, suggesting that fish was not a major dietary component.

Analysis of butchery marks showed that carcasses had undergone a degree of processing and that joints had arrived at the site 'dressed'. The basic butchery tools were a cleaver, a saw and a knife(s). Use of the cleaver for chopping is restricted to vertebrae, where carcasses were split down the sagittal plane into left and right portions. The most striking aspect of the assemblage is the high occurrence of sawing marks (Table 5; 79.8% of all butchered bone), which would be even higher if rabbits and birds — which saws would not usually be employed upon at all due to their size — were excluded. Saw marks are charac-

terised by regular delineations on the surface of the cut itself; a saw will not fracture the bone and the surface will demonstrate the striations through to completion of the cut. The presence of a high proportion of sawing marks reflects the increased use of the specialist butcher's saw, which is similar in form to a hacksaw and was invented in the 18th century. A knife would be used initially to cut through soft tissue, as the saw teeth would rapidly become clogged if used for this. The saw would then be used on the bone. In earlier periods a cleaver would have been used, but the saw was preferable as it reduced the splintering of the bone. By the early 20th century, as well as the butcher's saw there were other specialised

Table 4. Skeletal element count for all species from Planting Bed I.

Element	Cow (+ cattle-sized)	Sheep (+ ovicapra + sheep-sized)	Pig	Rabbit	Cat	Chicken (+ galliformes)	Goose (+ anseriformes)	Bird n.f.i.
Mandible	-	-	-	5	-	-	-	-
Maxilla	-	-	-	3	-	-	-	-
Skull	-	-	-	2	-	-	-	-
Coracoid	-	-	-	-	-	2	(+1)	-
Humerus	-	3 (+1+1)	-	4	-	1	1	1
Radius	-	1 (+2)	-	2	-	-	-	3
Ulna	-	(+2)	-	2	-	1 (+1)	(+1)	-
Pelvis	-	(+12)	-	6	-	-	-	-
Scapula	-	2 (+3)	-	2	-	-	-	1
Femur	-	(+16+2)	1	2	-	-	2	-
Fibula	-	-	1	-	-	-	-	-
Tibia	-	4 (+20)	2	5	-	1	2	2
Astragalus	-	3	-	-	-	-	-	-
Calcaneum	-	5 (+3)	-	-	-	-	-	-
Carpometacarpus	-	-	-	-	-	1	-	-
Centroquartal	-	(+3)	-	-	-	-	-	-
Metacarpus	-	4	-	-	-	-	-	-
Metapodial fragment	-	-	-	-	1	-	-	-
Tarsals	-	-	-	-	-	4 (+1)	(+2)	-
Furcula	-	-	-	-	-	-	-	1
Rib	25 (+ 1)	(+22)	-	-	-	-	-	1
Phalanx	-	-	-	-	-	-	-	1
Cervical vertebrae	-	(+1+4)	-	-	-	-	-	-
Lumbar vertebrae	16	-	-	-	-	-	-	-
Thoracic vertebrae	2 (+ 1)	(+0+1)	-	-	-	-	-	-
Unknown vertebrae	1	(+5+1)	-	-	-	-	-	-
Limb-bone fragment	-	(+0+1)	-	-	-	-	-	-
Total	46	122	4	33	1	12	9	10

Species	Total No. of bones	Cut	Cut %	Chop	Chop %	Saw	Saw %	Total with butchery marks	Total with butchery marks%
Cattle	46	1	2.2	4	8.7	38	82.6	43	93.5
Sheep	122	7	5.7	2	1.6	54	44.2	63	51.6
Pig	4	1	25	-	-	3	75	4	100
Rabbit	33	5	15.2	-	-	-	-	5	15.2
Bird	31	3	9.7	1	3.2	-	-	4	12.9
Total	236	17	7.2	7	3	95	40.3	119	50.4

Table 5. Number and proportion of butchered bones from food species in Planting Bed I.

variants such as the 'beef splitter' and the 'pork packers saw' (Disston 1916: 24) although it is impossible to distinguish exactly which saw(s) were employed. It is likely that a range of different knives were employed for various purposes. Although the butcher's saw was a commonly utilised tool by the early 20th century, in some instances it was employed even when it was not the most appropriate tool. The most likely explanation is that the saw was effectively the default tool, which was sometimes utilised because it was the most readily available implement rather than the one best-suited to a task. It is even possible that the butchery was carried out by relatively poorly-equipped butchers who did not have access to the full range of tools in use during the early 20th century.

One question that arises from such assemblages is what quantity of meat the animal bone equates to, which has implications for the diet of the household and also what period of meat consumption by the household the animal bone is likely to represent. Using meat weight calculations from 18th–early 20th century carcass weight data (Turner et al. 2001; 2003) and the concept of the Minimum Number of Butchery Units (MNBU) (Lyman 1979) it is possible to estimate the amount of meat represented (Table 6).

Table 6. Minimum Number of Butchery Units (MNBU) and meat weights from Planting Bed I.

Species/ meat	Joint	Total No. bones	MNBU	Estimated meat weight (kg)	Total estimated meat weight (kg) by meat type
Cattle/ beef	Thin rib	25	2	3.4	35.6
	Fillet, sirloin	19	2	14.4	
Sheep/ mutton	Leg	36	12	3.3	48.2
	Shoulder	14	2	4.3	
	Other	40	1	-	
Pig/pork	Leg (partial)	4	1	8.2	8.2
Rabbit	-	33	2	c. 3.6	c. 7.2
Chicken	-	10	2	c. 0.25	c. 0.5
Goose	-	5	1	c. 0.1	c. 0.1
Total	-	186	25	-	c. 100

Unfortunately, the MNBU — whilst useful for comparative purposes (Fig. 11) — substantially overestimates the actual amount of meat consumed. This is because the MNBU relates to wholesale units, whereas in 19th–20th century Western market economies the pieces of meat that are actually purchased from butchers or probable Retail Units of Acquisition (RUA) represented by animal bones are likely to have been much smaller (Huelsbeck 1991: 69–70). These are more difficult to calculate accurately, but the actual quantity of meat purchased may have been in the region of 25% of the MNBU value (Huelsbeck 1991: table 2).

The condition of the bone indicates that it was rapidly covered and its distinctive nature suggests that it does not represent mixed material from a wide range of sources. Annual meat consumption in the 1830s was c. 39.4kg per person, although there was undoubtedly a high degree of variation (Rixson 2000: 333). By the 1870s it had risen to c. 50kg and by the 1890s to c. 54kg (ibid.). Meat consumption was c. 60 kg per person per annum when the Planting Bed I assemblage was deposited. A series of early–mid 19th century faunal assemblages from Grand Arcade, Cambridge (Cessford and Dickens in prep), where household size can be accurately assessed through census data, suggests that the animal bone represents c. 7–72 days worth of meat consumption (Table 7). If allowance is made for assemblages where there is likely to be a significant component not linked to the domestic household, for instance when they were engaged in some form of business involving food, then the range is likely to have been between a week and a month. The 25kg (RUA) of Planting Bed I represent c. 150 person days of meat consumption. If a month's consumption is present then this would indicate a household with five members, whereas if only a week's consumption is present then a household of 22 is indicated. Lack of census information for the relevant period makes certainty impossible, but the combination of smaller household and longer period appears the more probable.

By the 1920s trade directories indicate that there were typically five or six butchers in St. Neots at any one time. Most of these individuals were located on the High Street, but suggestively the southern end of the adjacent property No. 14 Huntingdon Street was used as a butcher's shop at this time, principally by

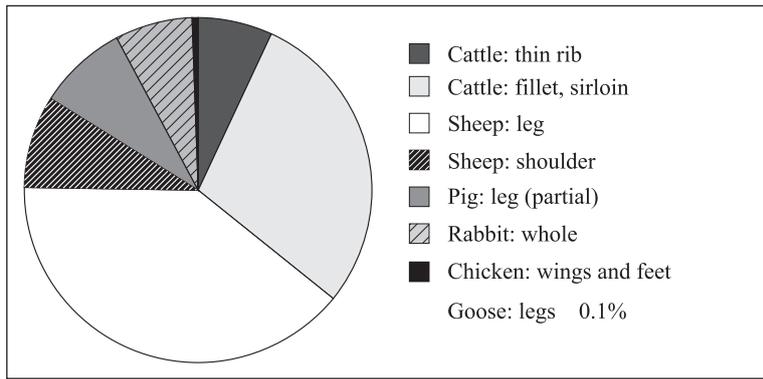


Figure 11. Relative proportions of meat represented in the assemblage from Planting Bed I.

Feature	Meat weight by MNBU (kg)	Meat weight by RUA (kg)	Date	Estimated household size	Meat weight by RUA divided by estimated household size (kg)	Days for estimated household by RUA	Comment
Planting Bed I	100	25	1910–1930	2–5	5.0–12.5	32.9–82.2	Cressner House
Soakaway 2 (GA)	51.2	12.8	1813–1823	7	1.8	16.7	Grocer plus family
Planting Bed 3 (GA)	147.8	37	1822–1834	15	2.5	23.1	School, probably had extra non-boarding pupils
Soakaway 3 (GA)	101.7	25.4	1808–1825	5	5.1	47.2	College cook, some meat may be non-household
Cellar 7 (GA)	15.3	3.8	1830–1850	5	0.8	7.1	Butcher plus family
Cellar 4 and Pit 63 (GA)	188.0	47	1830–1845	6	7.8	72.3	Inn, some meat non-household

Table 7. Meat consumption from Planting Bed I compared to early–mid 19th century faunal assemblages from the Grand Arcade, Cambridge (GA). RUA= Retail Units of Acquisition.

John Brown Bartlett and Sons. It is tempting to speculate that the bulk of the meat consumed at Cressner House was obtained here.

There were also thirteen bottles of Eiffel Tower fruit juices (Planting Bed II), manufactured by Foster Clark and Co of Maidstone. This company was founded in 1891 and the design of their bottles changed very little until the 1930s (Fig. 12). The ‘fruit juice’ in the bottles was probably concentrated lemon juice, used principally for cooking rather than drinking. There was also a single complete Lea and Perrins Worcestershire sauce bottle, which by the mid to late 19th century was the most popular sauce in Britain (Keogh 1997). Whilst the Eiffel Tower fruit juice bottles perhaps represent an idiosyncratic personal dietary preference, the Lea and Perrins Worcestershire sauce is part of a much more generic national display of tastes, as it is found in many mid 19th to early 20th century assemblages regardless of the wealth or social status of the household. Indeed, this was a truly international product, as is demonstrated by its prevalence across areas such as the American West (Dixon 2005: 97), and as such it can be viewed as a representative of globalisation.

At least four large, vertically-sided rectangular rubble-filled features were dug in the garden area of

Cressner House. These may simply have been gravel quarries that were then used to dispose of the debris from building demolition, but alternatively they may have acted as substantial soakaways associated with some form of specialised activity. These pits seem unlikely to have been linked to the domestic occupation of Cressner House. Following the death of Hannah Harvey, Cressner House became the St. Neots Urban District Council offices in 1938 (Tebbutt 1978: 281) and the partial clearance of the site at this time seems to provide a more plausible context for these features. These pits contained relatively few finds; however, one (Pit IV) had at least three Eiffel Tower fruit juice bottles. As this feature was not fully excavated it is possible that many more bottles were present, and their prominence suggests that they derived from the clearance of Cressner House following the death of Hannah Harvey, as the features are more likely to relate to the St. Neots Urban District Council offices, but the bottles are domestic in nature. This would also fit with a broadly recognised pattern that the deposition of large assemblages of material is often linked to the end of lifecycle of households headed by women (Wheeler 2000, 11–12).



Figure 12. Group shot of Eiffel Tower fruit juice bottles Planting Bed I, plus detail of text on the sides of the bottles.

Conclusion

Although the investigated area is in many senses peripheral to the main development and narrative of the town of St. Neots, the expansion and contraction of occupation here provides a useful barometer of the fluctuating fortunes of the town (cf. Keene 1976; Schofield and Vince 2003: 66–68). As such, the earlier part of the story accords well as a local reflection of what are in effect the major British and indeed pan-European watersheds of the medieval period. At a local level the establishment of urban occupation along Huntingdon Street in the 12th century fits with a major shift in the focus of occupation of the town after 1113, when the Priory of St. Neots was granted the whole manor in which it was situated. Yet it is also emblematic of the pan-European pattern of population growth and increase in national economies that had begun in the 10th century (Schofield and Vince 2003).

This general phenomenon reached its height in the 13th–early 14th century (Schofield and Vince 2003), when the site displays the greatest extent of urban expansion and prosperity. Its subsequent decline corresponds to the 14th century ‘Crisis of the Late Middle Ages’. By the late 13th century Europe may have become overpopulated and the ending of the Medieval Warm Period brought on the period known as the Little Ice Age, with harsher winters and reduced har-

vests. Food shortages and rapidly increasing prices resulted in malnutrition and increased susceptibility to infections. Several years of cold and wet winters, beginning in 1314, led to catastrophic famine, which may have killed over 10% of the population of north-west Europe. There had been little if any demographic recovery by the time the Great Mortality, or Black Death, pandemic struck in 1348–1350, killing 30–60% of Europe’s population. There were then further outbreaks of plague in England in 1361–1362, 1369, 1379–1383 and 1389–1393 (on 14th century demography see Hinde 2003; Platt 1996; Sloane 2011). At the site the mid 14th century saw the beginning of a prolonged period of decline, which culminated during the early 17th century in a total reversion of the area to agriculture. Urban occupation was not then re-established until the mid 18th century, during the boom of the Georgian Era and the Industrial Revolution.

If the archaeological remains of the 11th–19th centuries make an, albeit minor, contribution to a grand pan-European narrative, the focus shifts in the early 20th century. The material remains linked to Hannah Harvey’s occupancy provide an intimate portrait of aspects of the life of an identifiable individual household, albeit one whose details are relatively elusive in the documentary record. It is unclear if the material was deposited before or after the death of Albert Harvey in 1932, so the precise composition of the household that generated the material is impossible

to determine. Even if the material was deposited in 1920 then Hannah and Albert were aged 56 and 48 respectively and the household is likely to have consisted of simply the married couple or the widowed Hannah plus one or two servants.

The Harvey household probably ate eggs and drank coffee for breakfast using a colourful service, and later in the day dined on a wide variety of cuts of meat using bone handled cutlery, and was extremely fond of the products of baking using concentrated lemon juice although we can not know if she herself undertook the baking. The household possessed two sets of black transfer-printed dining ceramics, these were several decades old having probably been manufactured c. 1882–1888. As Hannah Harvey née Franks was born in 1864 it is possible that she acquired these then highly fashionable items when she was in her late teens or early twenties. As her husband Albert was rather younger than Hannah he provides a less likely origin for this material, although it is possible that they were wedding gifts for his first marriage to Mary Ann Phillis Childs in 1892. Whatever the source of these ceramics by the time of their deposition they were relatively old that possessed a distinct ‘object biography’ (e.g. Joy 2009). Drinking tea from a range of rather gaudy services was an important household activity, although a rather plainer and more staid service with a gilt tea leaf was probably employed when there were visitors present. Hannah or some other member of her household probably suffered from ill health, including problems with the chest, throat and lungs. As well as material relating to the members of the post-World War One household also present was a cap badge, perhaps a memento of Edwin Harvey, who died in 1916. There is evidence for at least one child who played with a doll, a miniature tea service and a rubber ball, although whether these items represent a contemporary child or retained childhood mementos is uncertain.

One theme linking the two rather disparate elements of the site narrative is that of agriculture. Whilst the archaeological narrative has rightly focussed upon the occupation centred along Huntingdon Street, it should be remembered that up until the 20th century the bulk of the area located further east of Huntingdon Street was always given over to food production. The scattered finds, from Neolithic flint onwards, hint at the likely usage of the land for millennia without creating a significant archaeological impact. Even at the height of medieval occupation in the 13th–mid 14th century, at most only the c. 65m closest to Huntingdon Street were occupied, with c. 180m or nearly three quarters of the length of the plots remaining as open fields. The occupied area itself was not intensively utilised and it is likely that much of it was dedicated to food production, such as the growing of vegetables and rearing of pigs. One explanation for the prolonged period of declining occupation from the mid 14th to early 17th century is that the area had been given over solely to food production, but that it made sense to retain some earlier features such as Well II. The country/farm house style buildings of

Cressner House constructed in the mid 17th century are agricultural in character and this pattern continued well into the 19th century. The shift away from agriculture began in the mid 19th century, but even the early 20th century planting beds may represent a form, albeit attenuated, of food production on a minor scale and the meat being eaten was presumably obtained largely from a professional butcher. It is likely that with the creation of the St. Neots Urban District Council offices in 1938 that domestic food production largely ceased, as there was no longer a substantial garden area associated with Cressner House, and even then much of the area remained open space until the current development.

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Archaeological Excavations at Whitemoor Marshalling Yard, March

Martin Railton and Fiona Wooler

Whitemoor Marshalling Yard at March in Cambridgeshire was one of the largest and most important marshalling yards in the UK, and was a site of technical innovation, including Britain's first 'mechanised hump' marshalling yard. Although abandoned in the 1990s, the redevelopment of the site by Network Rail has provided an opportunity to re-examine the history and development of the site, which included the archaeological excavation of the remains of some of the buried railway structures. In addition, this work has revealed evidence for some of the early history of the site, including possible Iron Age features and part of a Romano-British field system.

Project Background

In 2010 Wardell Armstrong Archaeology (formerly North Pennines Archaeology) were commissioned by Wardell Armstrong LLP, on behalf of their clients Network Rail, to undertake an archaeological trial trench evaluation and subsequent open area excavation of land at the former Whitemoor Marshalling Yard, March, Cambridgeshire (NGR TL 4123 7873) (Figures 1 and 2). The work was undertaken at the request of Kasia Gdaniec, Senior Archaeologist at the Cambridgeshire Archaeology Planning and Countryside Advice service (CAPCA), and formed a condition attached to a Planning Application Consent for the redevelopment of the site as a National Track Materials Recycling Centre (NTMRC).

A previous archaeological appraisal of the site (Jacobs 2008) demonstrated that the site had considerable archaeological potential in terms of its proximity to known Romano-British sites, whilst the 19th and 20th century railway yards themselves were considered to be of regional and national significance. The yard was once one of the biggest and busiest in Europe, and the site was expected to contain the remains of Britain's first mechanised gravity 'hump'. A topographic survey of the site undertaken by North Pennines Archaeology Ltd in 2010 emphasised the survival, at surface and sub-surface level, of many of the structures associated with one of the railway yards (Railton 2010).

The subsequent evaluation involved the excavation

of 65 trenches, which identified significant archaeological remains. In general terms, the archaeological remains consisted of concentrations of Romano-British features, which had survived later developments in several areas of the site, together with the remains of parts of the railway yard infrastructure that had escaped the post-closure programme of demolition and salvage. Of particular importance were a series of Romano-British features believed to be associated with the Fen Causeway Roman Road and the remains of two 20th century railway turntables (Cavanagh 2011).

Following the completion of the trial trench evaluation, a programme of archaeological mitigation, consisting of a series of open area excavations, was immediately implemented. The open area excavations focused upon a series of Romano-British ditches on the south side of the site, believed to be associated with the Fen Causeway Roman Road, and an area of intense Romano-British activity at the centre of the site. The northern end of the 20th century Gravity Hump was also investigated, and the full excavation of both the railway turntables was undertaken (Cavanagh 2011). During this work open days were held at the site, which attracted a significant amount of interest from the public, including a number of previous employees, who provided valuable insights into the interpretation of the railway features investigated.

Historical Background

The earliest evidence for occupation of the March area is a collection of Mesolithic and Neolithic flint tools discovered in the 1920s near Gaul Road, 2km southwest of Whitemoor Marshalling Yard, which were supplemented by discoveries made during fieldwork in the late 1970s and early 1980s (Jacobs 2008). Late Mesolithic to Early Neolithic worked flints were also recovered during a recent evaluation to the west of Hundred Road (Hutton and Standring 2008). During this late Mesolithic and Early Neolithic period, March was an island surrounded by shallow salt water lagoons that may have been exploited for wildfowl and fish (Jacobs 2008).

Throughout the Early Bronze Age, the land around the March island was subjected to a major inundation, leading to prolonged periods of isolation from the mainland. Bronze Age sites and finds are therefore confined mostly to the higher ground of the larger fen islands and the fringes of the mainland. The inundation was followed by the beginnings of peat growth, a process which continued into the Iron Age. Most of the marine deposits surrounding the islands developed a covering of peat and a number of sites dating from this period are known, including Flaggrass Hill (a raised part of the March island) located 1km north-east of the site. As well as producing salt from the brackish water in the remaining tidal lagoons, this site may also have exploited a river channel that existed at this time as a transport link to nearby settlements on Stonea Island to the south (Jacobs 2008).

Although transport and communications during the Iron Age were dependent mostly on boats, timber trackways were constructed between many of the fen islands, including a predecessor of the Roman Fen Causeway which linked the mainland at Fengate with Denver in Norfolk (Malim 2000, 11).

Roman-British activity in the area included the construction of a fort at Grandford, approximately 2km to north-west of March, in response to the Boudiccan revolt of AD 61. The Fen Causeway appears to have been established or developed as a major supply route at around this time. This feature was the principal east to west route in the Roman period across the East Anglian Fens in the counties of Cambridgeshire and Norfolk. The road largely consists of a thick spread of

sandy gravel, and takes an eccentric course for much of its length, often diverting to take advantage of islands of solid ground. The Causeway branches out of a complex of roads lying north of the river Nene and the village of Castor. It then heads east until its course is lost beneath modern Peterborough, before re-emerging as it crosses the Fengate complex, a substantial prehistoric and Romano-British settlement, which may have been abandoned by the time of the road's construction. The Causeway then stretches out onto the peat of the Flag Fen basin, continuing east to the more solid ground of Whittlesey Island. The course then passes north of Eastrea and onto Coates before entering the fen proper at Eldernell and crossing in a straight line to March island, before hitting solid ground once more at Grandford. It is therefore clear that the Fen Causeway needed to be constructed as two general types of road: the dry land sections, where it would have been built with little difficulty across the gravel islands of the fen landscape, and the more difficult sections across the fen (Fincham 1998, 19). At March, the Fen Causeway has been identified as a large earthwork which crosses the fen from Peterborough, and then continues across the edge of the Terrington Bed silts to Norfolk. Its course, in two lengths either side of March, is straight and at the Peterborough end there is a limestone spread of 'metalling' on the surface, whilst elsewhere the surfacing has a cover of gravel (Hall 1987, 41).

The fertile fen silts around March were extensively farmed during the Roman period and a large number of cropmarks representing a widespread system of field ditches are known from the area surround-

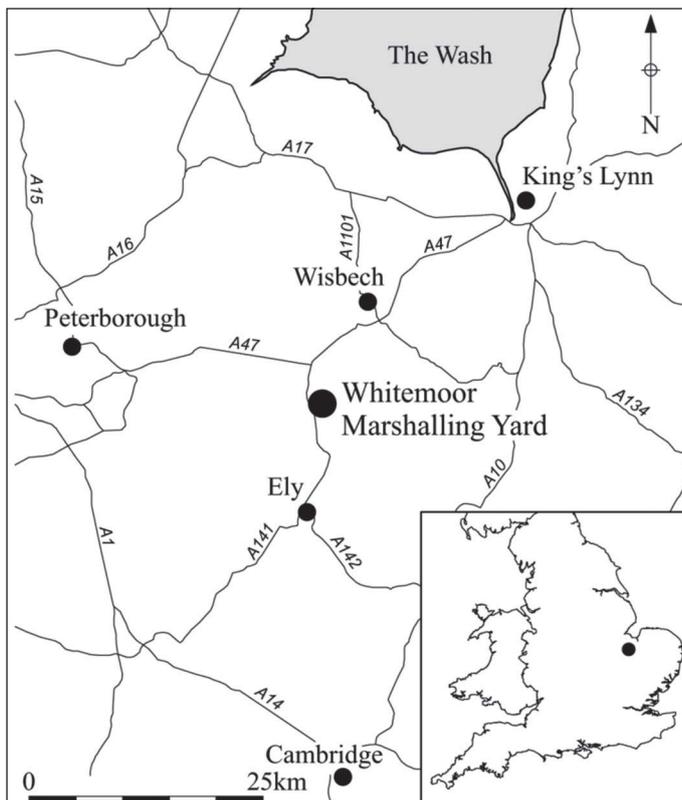


Figure 1. Site location.

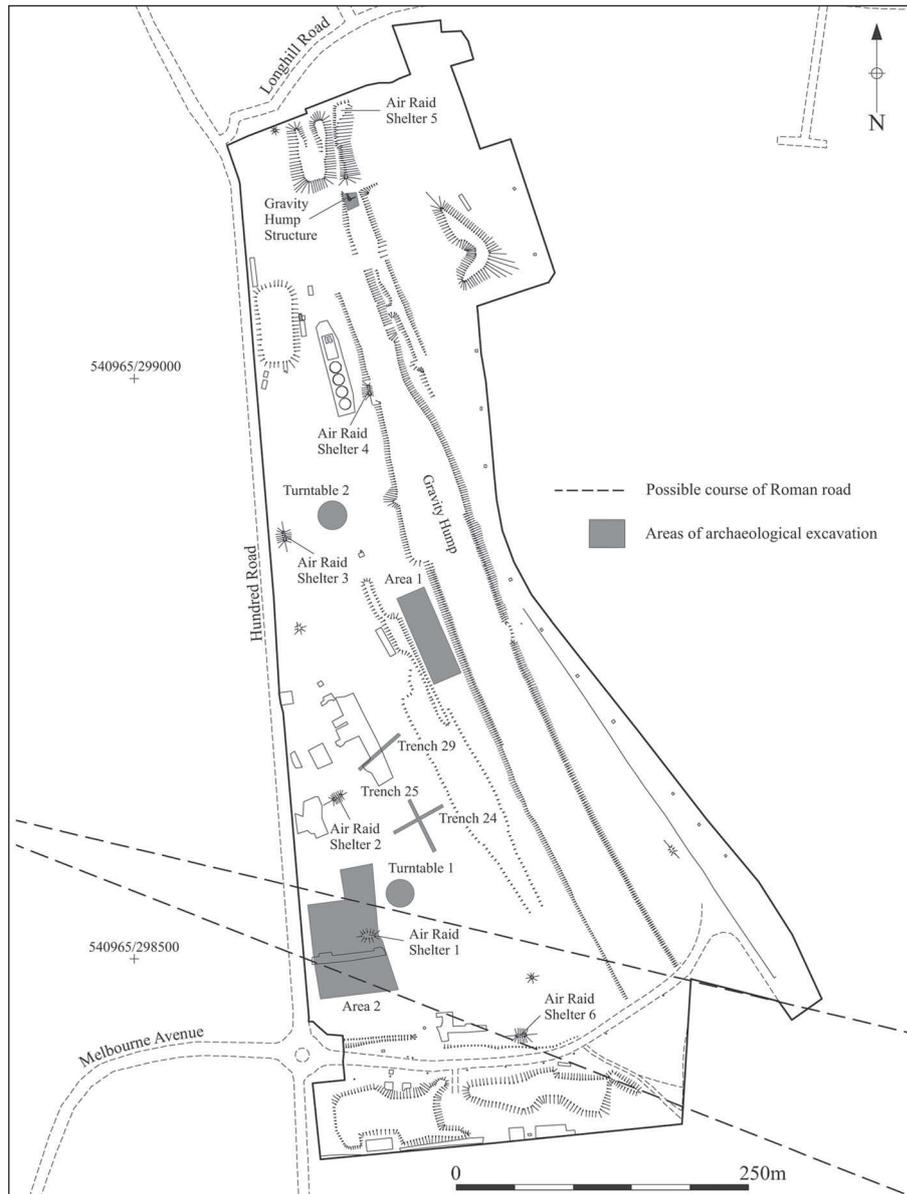


Figure 2. Site plan showing areas of investigation.

ing the Whitemoor Marshalling Yard. Closer to the site, investigation of cropmarks on the west side of Hundred Road revealed the presence of a number of field ditches, although no dating evidence was recovered. Comparison to similar sites in the region suggests that they are Roman in date (Hall 2004, 3). Salt production continued into the Roman period as is evidenced by the discovery of a settlement and saltern during excavations at Longhill Road, 180m north-east of the site. This site may have been established during the late Iron Age and lasted until the early 3rd century AD when it may have been abandoned due to changes in water level (Atkins 2003). Evaluations carried out in advance of Phase 1 of redevelopment at Whitemoor revealed the truncated remains of occupation sites dating from the early Romano-British Period (Hall 2004).

The name March is recorded in the Domesday Book of 1086 as *Merc*, a derivation of the Old English *Maerc*, meaning (*the place at the boundary*) (Mills 1991, 318). No Saxon finds are known from March itself, although this may be due to the movement of the main settlement focus approximately 3km to the south to its present position in the pre-Conquest period as a result of fenland drainage and improvement schemes instigated by the Abbots of Ely. In the post-Conquest period Ely became a cathedral city in 1109 with extensive estates in the area. The settlement pattern in this period was characterised by dispersed villages and isolated farmsteads, especially across the more accessible silt land around the former fen islands such as March and Wisbech. Further drainage improvements and river canalisations stimulated the growth of water-borne trade and by the 16th century March had

developed into a minor port (Pugh 1967, 117).

During the early post-medieval period there was continuing improvement and drainage of the fens, most notably through the General Drainage Act of 1600. However, March itself failed to prosper, with the biannual fairs and a market that were granted in 1670 having lapsed by 1790 (Pugh 1967, 116). In these conditions, the arrival of the railway in 1846 gave the impetus to a rapid expansion of March into a thriving market town.

The first railway line had opened to freight traffic in December 1846, and in 1847 the original station opened and the passenger service commenced, the line being operated by Eastern Counties Railway (ECR). As March quickly became a four-way junction, with lines heading in a north-westerly and north-easterly direction, as well as the Ely and Peterborough Branch which lead east and west, traffic developed and a small engine shed was provided in 1850 in the fork of the Peterborough and Wisbech lines at the end of the two-platform station. The Eastern Counties Railway was locked into an area of industrial insignificance with little mineral traffic, which was the backbone of railway prosperity. East Anglia was largely an agricultural region and the resultant goods traffic was sparse and fluctuated with the seasons. By 1862, the ECR had absorbed most of the other railways in East Anglia and adopted the name the 'Great Eastern Railway' (GER). The GER wanted to improve its finances by providing a line north, initially from March to Spalding via Thorney and Crowland, but this was rejected in Parliament in favour of an alternative route promoted by the GER's rival, the Great Northern Railway (GNR). This line, via Murrow and Guyhirn was opened in 1867, and it was from this point that sidings were laid out on Norwood Common, to the north of the town, and would later be known as Whitemoor (Stacey 1997, 61). A degree of reconciliation between the two companies led to the creation of the Great Northern and Great Eastern Joint Committee (1879), which in 1882 opened its Spalding-Sleaford-Lincoln line, which gave the GER access to the coalfields of Nottinghamshire, Derbyshire and South Yorkshire, which consequently gave March its nodal status in sorting loaded coal wagons coming south and empties returning north. This was very important: most wagons were 'private owner' (i.e. they belonged to the originating colliery company or the eventual recipient, coal merchants, gas companies etc) and therefore the wagons had to arrive at/return to the appropriate destination (Tony Kirby pers. comm.).

At the end of the 19th century March had become a prominent railway town, and during the 1880s a large increase in the town's population occurred to provide a workforce for the ever-expanding railway (Stacey 1997, 62). A report in July 1883 noted: '*March is becoming one of the company's most important junctions, 75 passenger trains, exclusive of specials, pass through there every day*' (Ludlam 2009). It would appear from further information provided in this 1883 report that March Station was clearly not equipped to cope

with the demands of the increased traffic. Plans were submitted for a new engine shed for the now amalgamated 'Great Northern and Great Eastern Joint Railway', with six 'roads' covered by three roof pitches, turntables, coaling facilities and water tank at the Whitemoor Yards, which extended for around a mile to the north as far as Grassmoor Junction (*ibid*). The extent of the sidings at Whitemoor in the late 19th century can be seen on the First Edition Ordnance Survey map of 1886 (Figure 3).

In the 1920s, when the Great Eastern and the Great Northern Railway companies had been absorbed into the London and North Eastern Railway (LNER), the facilities at March and Whitemoor were described as totally inadequate and out-of-date. Freight operations at March had always been more significant than passenger traffic, and the LNER recognised that March was at the focal point of lines from London and East Anglia to the north and Midlands (Waszak 1985). As a consequence, the LNER embarked on a £285,000 scheme to construct a fully-mechanised, gravity-worked 'up yard', in response to the new sugar beet traffic and the substantial existing freight, especially of coal. This new work was completed in 1929 and the 'down yard' was similarly reconstructed in 1931 (Gordon 1968, 218).

Whitemoor was consequently the site of Britain's first 'mechanised hump' marshalling yard, a system which used gravity to allow wagons to enter the sidings where they were sorted automatically into sets for onward transfer to their destination. The site had two humps, northbound and southbound, which fed wagons into the two yards (the Up yard and Down yard). The site was also the first to employ the Frölich retarders which used compressed air brakes to control the speed of the wagons as they descended from the hump. Two position signals were used by the shunting staff at Whitemoor Hump to indicate to the shunt engine driver the required speed to propel the wagons over the hump. As such, Whitemoor Marshalling Yard was the site of technical innovation. Once the Up and Down yards were operational in 1933, it was believed to have been the largest marshalling yard in Europe (Jacobs 2008).

Marshalling yards are sidings where trains were made up or 'marshalled' by shunting wagons around. Larger yards have arrival, shunting and departing sidings. 'Flat' yards are worked entirely by shunting engines, in comparison, 'hump' yards are where shunting can be carried out by gravity, by constructing a raising gradient and slowing individual wagons to roll down from the top into the required siding (Morris 2003, 166 and 168).

Unlike railway freight depots, marshalling yards were, to a large extent, a 20th century creation. There were large groups of sidings in the 19th century, connected mainly with coal traffic, but it is generally accepted that the gently inclined sidings at Edge Hill, Liverpool, which were laid out by the London and North Western Railway (LNWR) in c. 1900 represented an innovation. The Midland Railway constructed a 'hump' yard at Toton, Nottinghamshire, where wag-

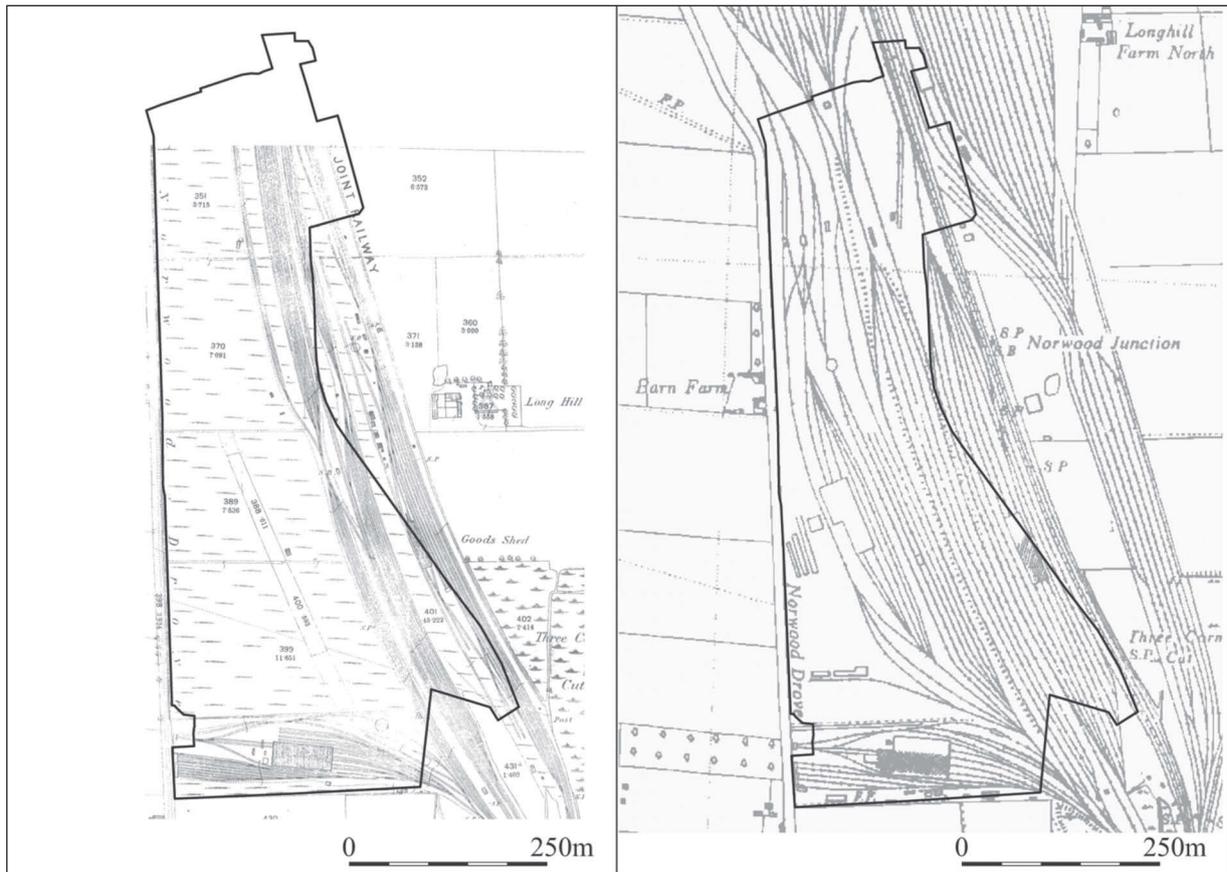


Figure 3. Historic maps, 1886 and 1950.

ons were pushed over the summit of the hump and their own momentum and a steeper gradient would take them down into a fan of reception sidings. In 1907 Great Central Railway opened a hump yard at Wath, south Yorkshire, in which wagons were slowed down by mechanical retarders. Further complex yards were constructed by companies such as the North Eastern Railway at sites such as Newport, Teesside, and during the inter-war years, extensive yards were built at Feltham, Middlesex (LSWR 1921–23); Mottram near Manchester (1935); Hull (LNER 1935); Banbury by the GWR (1931), and of course Whitmoor (1929 and 1933) (Stratton and Trinder 2000, 167). An article in *The Railway Gazette* of September 20th 1929 declared of Whitmoor Marshalling Yard: 'This new hump yard, near March, is the first in Great Britain equipped with Frölich Retarders. Accommodation is provided for 4000 wagons, serving 350 destinations. At this yard the whole of the coal and goods traffic for the Eastern Section of the LNER from places north, east and west of Doncaster, and also from collieries and yards on the Great Central Section, Nottinghamshire and Derbyshire lines via Lincoln, is received and marshaled for forward transit' (Great Eastern Railway Society Sheet M298). Figure 4 provides a general view of the Whitmoor 'Up' Yard looking south; with the loaded wagons passing from the Hump to the sorting sidings, and Figure 5 is a view of wagons on the gravity hump itself.

Most marshalling yards were extended during the Second World War, and Whitmoor was no exception. The site became one of the most important in the country, with the volume of traffic growing to immense proportions as large quantities of war material passed through and despite staff shortages, poor quality coal, deteriorating locomotives and stock, and the blackout, the site endured (Ludlam 2009, 391). It is interesting to note that during the Second World War, there would have been anything up to 150 engines allocated to March; as a result the site became a potential target for German bombing. In an attempt to prevent such action, a site known as a 'Starfish' decoy was established at Stags Holt to the south of the town. Starfish (or 'Special Fires' or 'SF') sites were the codenames for decoys where a variety of effects to represent small or major conflagrations were staged in order to divert bombers away from intended targets (Brown *et al.* 1996, 64). The yards at Whitmoor escaped relatively lightly during the war, with the most serious incident involving a low-flying Wellington bomber which clipped the 'up hump' and crashed (Ludlam 2009, 391). Figure 6 shows technical drawings for a proposed new turntable at Whitmoor Yard, dated to 1944; this turntable would be fully excavated during the archaeological work (Turntable 2). By the late 1960s, wagonload freight traffic began to decline, in particular the once extensive household



Figure 4. General view of Whitemoor Marshalling Yard c. 1929, looking south, with wagons passing from the hump through the retarders to the sorting sidings. Image courtesy of Railway Gazette 1929.

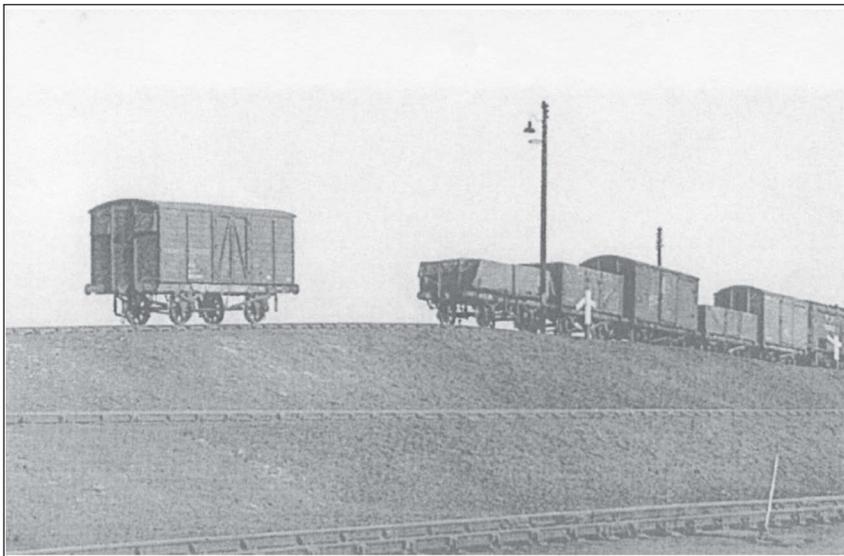


Figure 5. Wagons on the Gravity Hump at Whitemoor Marshalling Yard c. 1929. Image courtesy of Railway Gazette 1929.

coal traffic. Whitemoor remained busy at times, particularly when the late autumn seasonal transfer of beet pulp and seed potato traffic coincided with the pre-Christmas coal and parcels peak. By January 1972, freight traffic had declined to the extent that British Rail closed the Down yard at Whitemoor, marshalling being concentrated at the Up and Norwood Yards.

Following the decline of the railways as a result of post-war transfer of freight to road transport, the traffic through the Whitemoor Marshalling Yard began to reduce and despite some improvements in the 1980s, it closed in the early 1990s when many of the railway structures were demolished (Jacobs 2008). Although the excavations revealed archaeology from a number of earlier periods, including indications of the Romano-British landscape (Figure 7), this paper focuses on the modern industrial archaeology of the railway itself.

Archaeological Excavations:

Whitemoor Marshalling Yard

Several of the evaluation trenches were located to target features of interest relating to one of the railway marshalling yards (the Down yard), whilst the open area excavations concentrated on certain aspects of the marshalling yard, including the total excavation of two 20th century turntables and a section of the 20th century Gravity Hump.

Inspection Pits

Trenches 24 and 25 were targeted to investigate the remains of railway inspection pits which had been identified by the previous topographic survey (Railton 2010) (Figure 2). Trench 24 was aligned from southwest to northeast, at right angles to the presumed alignment of the inspection pits. A total of nine pits were revealed in this trench, and Trench 25

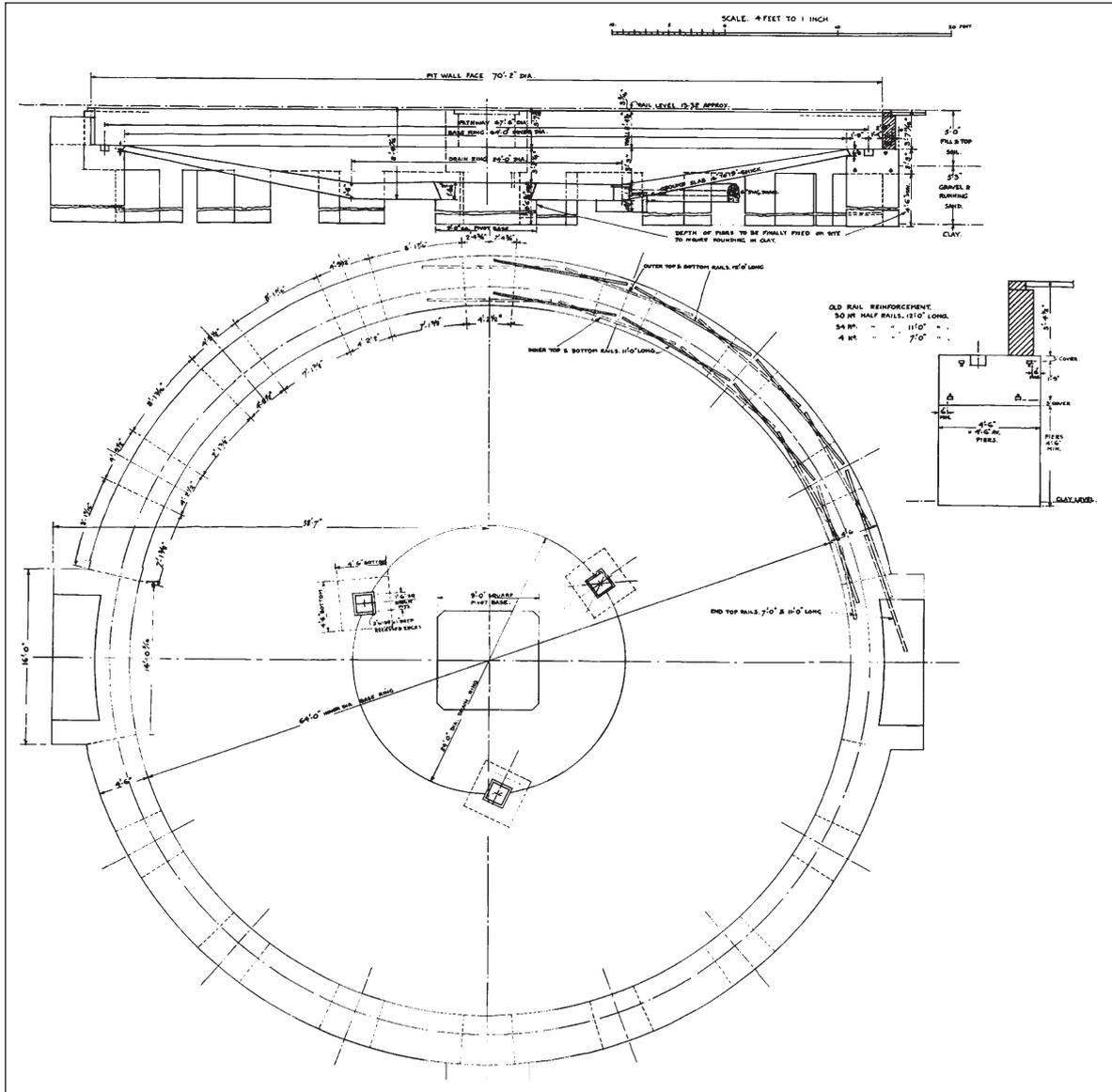


Figure 6. Plan of the new turntable, 1944. (Courtesy of Network Rail).

was set at a right angle to Trench 24 in order to expose the full length of one example.

It was clear that the inspection pits were identical in construction method and materials, each set in a vertical-sided, flat-bottomed foundation cut, with concrete rafts forming the bedding layers for the walls. Brick floors were laid between the side walls, so that the inspection pits were entirely brick-lined. One of the inspection pits was fully exposed and excavated in Trench 25. This pit had an overall length of 17.25m and width of 2.20m, with an internal width of 1.14m. The side walls were constructed of machine-moulded, dark red-black bricks, laid in a bond that alternated two courses of stretchers (the long edge of the brick) with one course of headers (the short end of the brick). The walls were 0.58m wide and were constructed to a height of 0.76m above the floor level of the pit. The upper courses of bricks facing the in-

terior of the pit were bull-nosed, whilst those facing outwards were flat faced. A series of evenly-spaced rectangular impressions ran along the entire length of the side walls; these impressions incorporated the remains of iron fixing bolts, and from several *in situ* examples observed in Trench 24 it was clear that the impressions represented the fixing points for track shoes which had supported the rails running along the length of the walls.

The floor of the pit was constructed of bricks identical to those used for the walls. The floor level had a gradual fall from northwest to southeast, whilst the brickwork itself had been laid with a concave camber. At the southeastern end of the pit, the floor drained into a northeast to southwest aligned drain that probably also served the other inspection pits in this area. The drain was covered by an iron inspection hatch that also formed the lowest of three access steps into

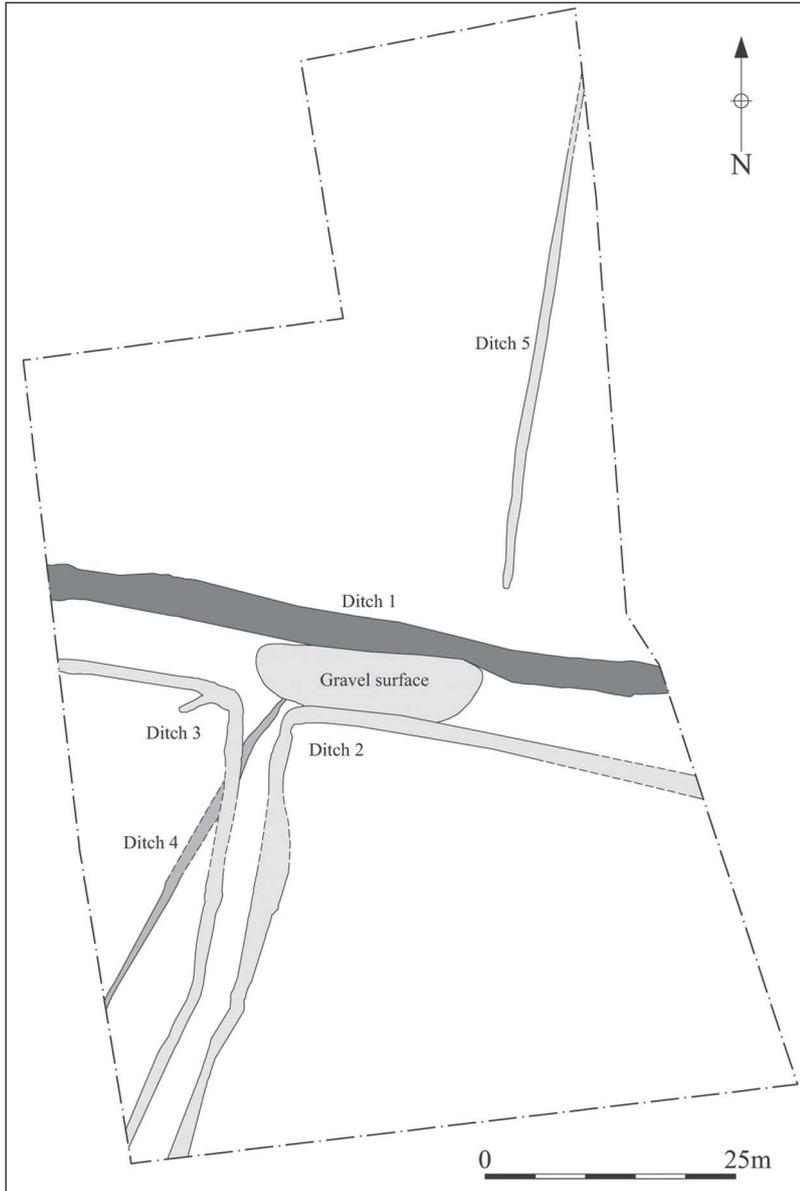


Figure 7. Excavation Area 2 features.



Figure 8. Inspection pit in Trench 25, looking south-east.

the pit, the remaining two being brick-built and incorporated into the south-eastern wall. A similar flight of steps formed the north-western wall of the pit (Figures 8 and 9).

The inspection pits revealed in Trenches 24 and 25 do not appear on an Ordnance Survey map of 1925, and no railway tracks are represented in this area of the site at that date. They may therefore have formed part of the redevelopment of the marshalling yard in the 1930s. A further eight inspection pits were revealed to the north, in Trench 29, which was targeted over the area of a former large 'main running shed'. The construction of these inspection pits was very similar to those observed in Trenches 24 and 25. Brick floors were revealed between five of these inspection pits, all of which would have been located within the large shed. The floors were laid at the surface level

of the pits and represented the original floor level within the building. All the floors were constructed of bricks similar to those used in the construction of the inspection pits.

Turntables

Two large turntables associated with the marshalling yard were fully excavated, one located to the south-west side of the site (Turntable 1) and the other (Turntable 2) located further to the north (Figure 2). In a railway context, turntables were used to 'turn around rolling stock'. They were especially used for locomotives, although in the early days of railways they were also used for wagons and coaches (Morris 2003, 173). The earliest phase of Whitemoor Marshalling Yard had at least one turntable, shown as a circular feature on the First Edition Ordnance



Figure 9. The concave base of the inspection pit in Trench 25.

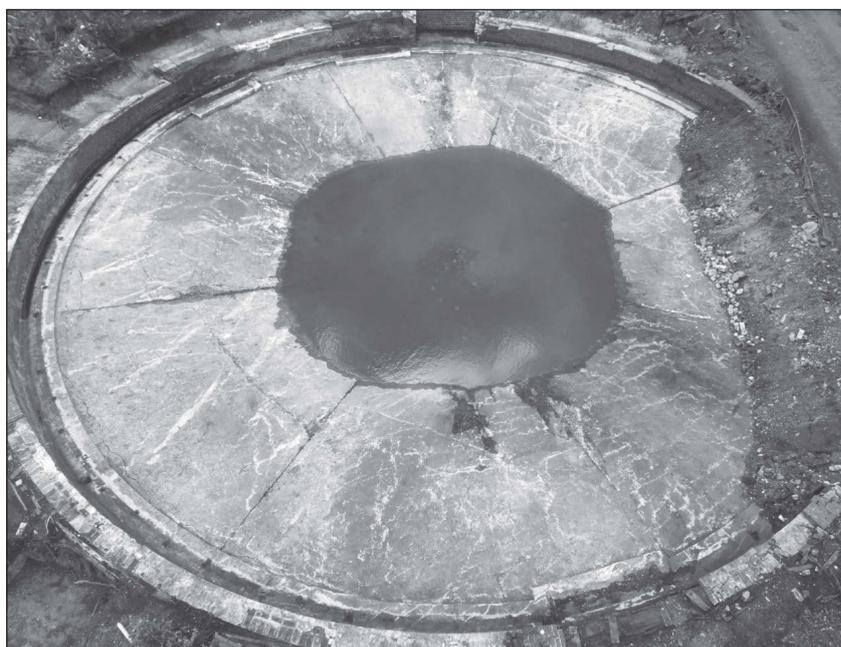


Figure 10. Aerial view of Turntable 1, looking south.

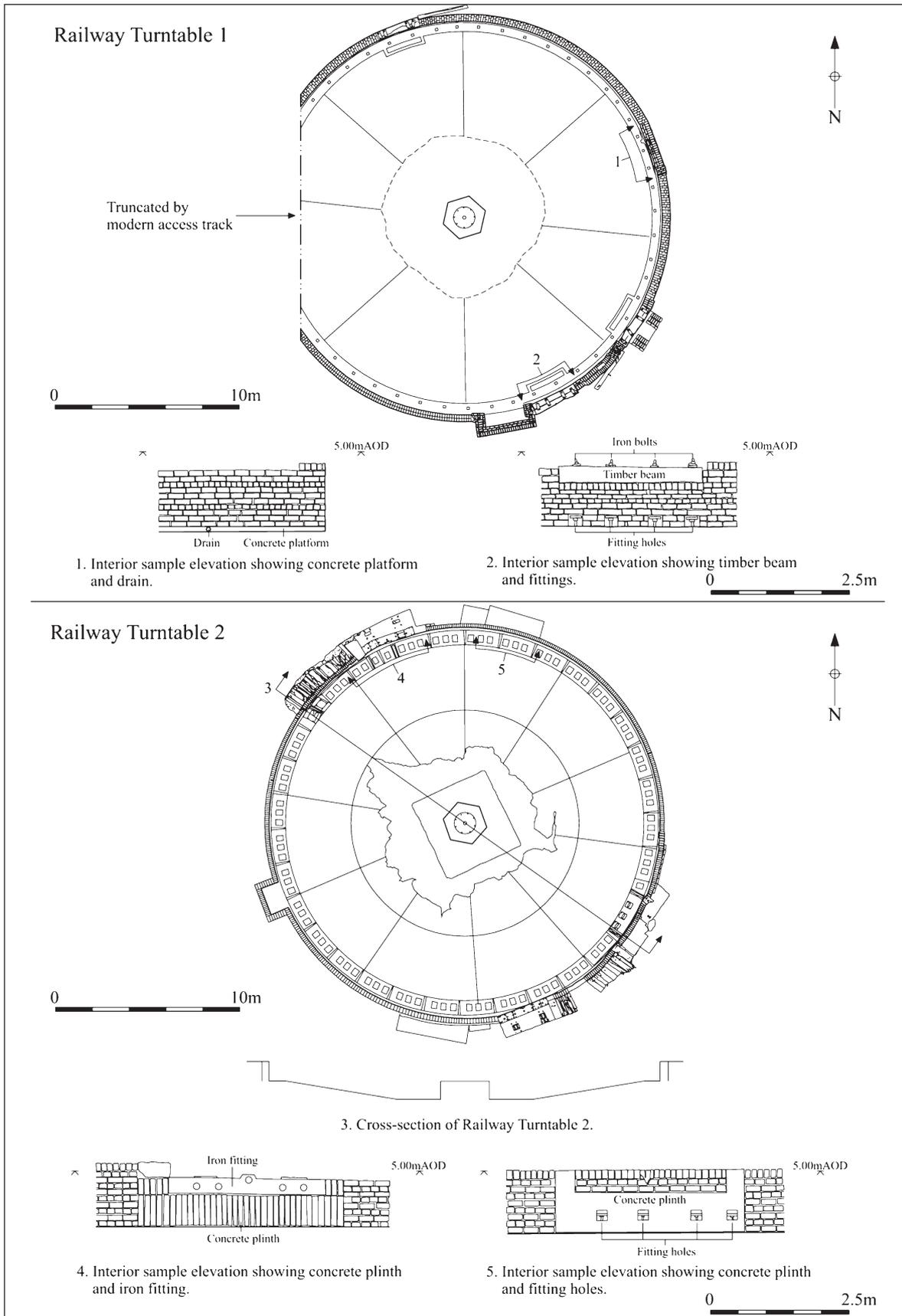


Figure 11. Railway turntables plans, cross-section and sample elevations.

Survey map of 1886 (Figure 3). However, the two excavated examples were both 20th century in date.

The Turntable 1 structure survived substantially intact, set within a 23m diameter circular construction cut. The turntable consisted of a 20.70m diameter concrete floor with a conical profile, which sloped steeply towards the centre. The floor had been laid in sections with the joints between each segment clearly visible (Figure 10). The enclosure wall of Turntable 1 was constructed of machine-moulded brick which was 11 courses in height, and was laid in stretcher bond. The wall had been constructed on a concrete platform which ran around the circumference of the floor of the turntable.

The centre of the floor almost certainly originally contained a substantial concrete stanchion supporting the central pivot or bearing for the rotating turntable arm, however this could not be identified as the centre of the turntable could not be completely drained of water. It would seem likely that the central pivot was destroyed or removed during the salvage of the turntable arm for scrap and that this process had also destroyed a sub-floor drain in the centre leading to the flooding.

Whilst the turntable arm and central pivot were missing, a number of interesting constructional details were observed. A 0.10m wide, 0.05m deep open drain ran around the circumference of the concrete platform on which the brick wall was constructed, close to the inner face of this wall (Figure 11). Set within the concrete platform which ran around the inner edge of the turntable were a series of rectangular machine-cut timber uprights, arranged in a radial pattern, which had been sawn off at the level of the concrete surface. The timbers originally supported a radial track or rail that ran around the inner circumference of the wall, which supported the ends of the turntable arm as it rotated.

At three points around the circumference of the wall of Turntable 1, the upper course of brick was interrupted by the insertion of 0.50m wide, 2.50m long timber beams, each of which still contained the re-

mains of metal fixings. Situated immediately below each of these beams were a series of four rectangular openings in the inner face of the turntable wall (Figure 12). Iron fittings could be observed within these holes and it is likely that these represented the other ends of the fixings visible in the upper surfaces of the timbers. Rectangular concrete pads were incorporated into the platform surface immediately in front of these openings, and each of these also contained the remains of iron fixing bolts. To the exterior of the turntable, three 1m wide, 0.20m long concrete and brick-built plinths were located immediately behind the timbers set within the turntable wall (Figure 11). It was therefore clear that the timbers and associated plinths represented the three points at which tracks entered the turntable, whilst the concrete and iron fixings in the interior of the structure probably represented the remains of the locking mechanism by which the turntable arm was correctly aligned with the tracks.

A final interesting feature of Turntable 1 was the discovery of a graffito which had been scratched into the surface of the concrete when it was still wet. This graffito referred to *September 1932* and may therefore provide a date of construction for Turntable 1.

Following the removal of the turntable arm and its associated machinery, Turntable 1 had been deliberately backfilled with a mixture of modern broken brick and railway clinker. This deposit was remarkably homogenous and the bricks appeared to have come from a nearby structure that may have been demolished at around the same time.

Turntable 2 was situated in the northern part of the site (Figure 2). A construction blueprint dated 1944 exists for this structure (Figure 6), which appears to have superseded Turntable 1.

Turntable 2 consisted of a large circular construction cut that truncated the natural sandy clays, and the overlying silty clay subsoil. Set within this cut was a conical concrete floor, with an internal diameter of 21.34m (slightly larger than Turntable 1), which dipped slightly towards the centre of the structure



Figure 12. Turntable 1 detail, showing timber beam, openings and concrete platform.

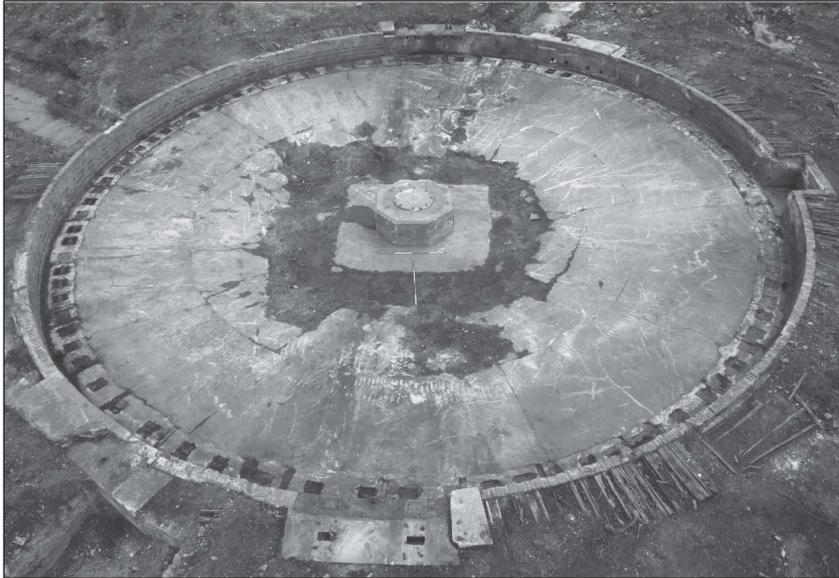


Figure 13. Aerial view of Turntable 2, looking south-east.

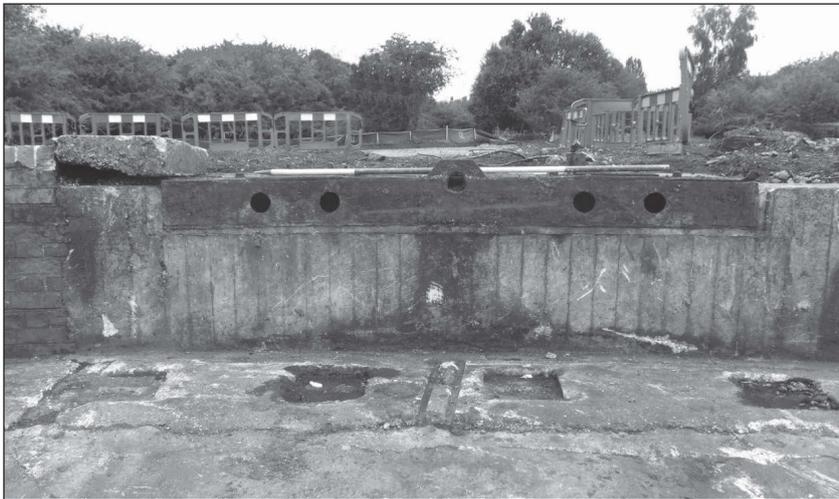


Figure 14. Detail of wall of Turntable 2, showing imprint of shuttering.

(Figure 13). The floor acted as a foundation for the circular turntable wall, which was constructed of brick. This enclosing brick wall survived to its full height of nine courses (1.10m) and was constructed of frogged, machine-moulded red bricks laid in alternate header and stretcher bond, capped with a top course of edge-laid headers. It was noted that some of the bricks were stamped 'ACCRINGTON NORI', these were hard, smooth, deep-red pressed bricks made of shale from the Coal Measures near Accrington, East Lancashire. They were widely used for engineering and industrial purposes and also for other building types in the late 19th and early 20th centuries. One of the trade names, 'Nori', is 'iron' spelt backwards and indicates the character of the brick (Brunskill 1990, 86). It was noticeable that the wall of Turntable 2 was markedly less substantial than that of Turntable 1, which may have reflected the shortage of suitable building materials in the immediate post-war period.

Whilst the construction of Turntables 1 and 2 were broadly similar, the two structures differed in some respects. Firstly the floor, which was also constructed

in sections, appeared to be less well-preserved than the floor of Turntable 1, the centre section giving the appearance of having subsided slightly, possibly reflecting the use of an insufficient, or poorer quality, concrete. At the centre of the floor, the concrete support for the turntable pivot bearing remained *in situ*. This support was a massive octagonal structure with a diameter of 2.50m and a height of 1.20m. Its upper surface bore the impression of a 1.15m diameter circular mounting and a series of fixing bolts, but the pivot bearing itself had been removed.

Set within the internal sides of Turntable 2 were two areas which consisted of 2.70m long concrete structures that each incorporated four small rectangular holes, similar to those observed in the wall of Turntable 1, although no horizontal timbers survived (if they existed) in these features. As with Turntable 1, iron fittings could be observed within these holes. There were indications that the upper layer of concrete on the structures themselves and the upper courses of wall above them had both been laid as part of a later phase of remodelling, and from this it was inferred

that these two features represented the original position of tracks entering the turntable that were subsequently replaced by two similar entry/exit points.

The internal sides of Turntable 2 contained two sections where the imprints of vertical timber plank shuttering for poured concrete could be observed between the brickwork (Figure 14). These sections related to the locations where the track entered the turntable, possibly after the remodelling, and each was constructed of a 3.30m long, 1.20m wide concrete plinth into which was set a rectangular iron fitting. These iron fittings were visible in the elevations of the turntable wall, and each incorporated four circular holes together with a centrally-placed raised fixing loop that faced the interior of the turntable.

The upper side of the iron box-like fittings had cast diamond-pattern non-slip surfaces and incorporated two smaller plates with track fixing bolts. Immediately behind the plates, and in line with them, the concrete plinths incorporated rectangular holes that housed short upright iron girders that were flanked by track fixing bolts, believed to be the track entry points to Turntable 2.

Running around the circumference of the floor of Turntable 2, close to the inner face of the wall, were a series of regularly-spaced roughly-applied square, shallow concrete recesses, each of which incorporated the remains of four fixing bolts and the impression of a metal track shoe (Figure 14). A number of re-used iron rails were embedded vertically in the floor and, together with the concrete and iron track fixings, these appeared to be the remains of supports for a circular rail that originally ran around the inner circumference of the turntable, supporting the rotating turntable arm.

The final feature of interest with regards to Turntable 2 was a timber walkway which ran around the exterior of the structure. The walkway was 1.0m wide and consisted of radially-laid planks which were formed from cut-down railway sleepers. The walkway was fastened together by long hand-wrought nails.

A former worker at the marshalling yard, who attended the open day held following the excavations, indicated that, as originally constructed, Turntable 2 was not motorised, but was turned by hand, the careful balancing of the turntable allowing a locomotive to be turned with relatively little effort. The walkway, therefore, formed the track around which the operatives turning the arm would walk.

As with Turntable 1, all of the machinery associated with Turntable 2 had evidently been salvaged when the structure fell into disuse. The interior had then been backfilled with a mixture of demolition rubble, broken concrete and ashy silt.

Recent archaeological work undertaken by Pre-Construct Archaeology Ltd (PCA) has revealed evidence for 19th century turntables within roundhouses at York. And at the former Great Northern Goods Yard at King's Cross in London, PCA have recorded a number of 19th century turntables within and outside a Granary Complex Goods Shed, however two 20th century turntables, which may have been compara-

ble with those at Whitemoor Marshalling Yard, had been removed prior to the archaeological work taking place. A mid-20th century turntable of 70ft diameter was recorded by PCA at the former Old Oak Common locomotive depot in 2010; this example had been constructed by Cowan Sheldon and Co of Carlisle in 1953 and was electronically driven (pers. comm. G Thompson, Pre Construct Archaeology (PCA)).

Gravity Hump

A 20m by 20m area at the extreme northern end of the Gravity Hump was excavated as part of the agreed mitigation strategy (Figure 2). The excavation revealed the remains of a brick and concrete structure measuring 6.5m by 3.0m. The structure appeared to have been built in two phases and consisted of a southern concrete foundation raft that supported a rectangular grey brick structure that contained a drain or manhole (Figure 15). A rectangular concrete beam, which possibly protected a buried drain or pipe, extended from the eastern side of the foundation.

The northern part of the structure consisted of an open-ended rectangular enclosure that was made of red, moulded bricks. Four large iron bolts were set into the brickwork, suggesting that the structure probably acted as a machinery base. No machinery remained *in situ* and the purpose of the structure has therefore remained unclear. Its location, however, on the gravity hump suggests that it was part of the railway control and switching apparatus.

Finds

Most of the modern finds recovered during the archaeological work at Whitemoor Marshalling Yard were found during topsoil stripping or were surface finds that were collected as they were encountered. The remainder were found within the backfill of railway features, most notably the two turntables and inspection pits. As far as could be ascertained, all of the material dated to the 20th century when the railway yards reached their height of operation. Some of the material, most notably the marked pottery, pre-dated the nationalisation of the railways in 1947, whilst the diagnostic British Railways items clearly post-dated this. The majority of the material represented discarded rubbish that had accumulated across the site and was therefore of little use in dating and phasing the railway structures.

There were several items found during the archaeological work which are of interest, and in some cases, Mr Barry Howlett, a former worker at the marshalling yard who attended an open-day at the site, was able to identify many of the more esoteric finds.

Figure 16 shows a large inflatable rubber dunnage manufactured by RFD Company Ltd, which would have been used for protecting fragile cargo. Of particular interest amongst the metalwork assemblage were several corkscrew-shaped iron hooks that were evidently designed to fit a long wooden handle. These were identified by Mr Howlett as shunters' poles, the hooks being used to snag wagon couplings as a means of directing and controlling the wagons as



Figure 15. View of the Gravity Hump structure, looking south.



Figure 16. An inflatable rubber dunnage.

they were dispensed to various sidings via the gravity hump. Other tools included firemans' shovels, a British Rail watering can, a 2m long heavy iron pinch bar, of a type used to help move wagons by hand, and an outsized spanner.

Air Raid Shelters

It has already been noted that Whitemoor Marshalling Yard was partly protected by a decoy site located at Stag Holt to the south of March during the Second World War. Other 20th century defence structures were identified within the proposed development area, which were subsequently recorded in 2009 and 2010 (Lilley and Lowman 2009; Railton 2010). These structures consisted of six air raid shelters which were located around the site, and presumably would have provided protection for the workers at the marshalling yard (Figure 2).

Air Raid Shelter No. 1 was completely uncovered in 2009 to enable a condition survey to be undertaken, prior to being recovered. It measured 20m in length, 13m wide and 3m high. This semi-circular structure comprised a brick-built entrance, with earth and concrete floor, bitumen covered concrete roof slab and pre-cast concrete arched beams with brick end walls and a large ventilation pipe to the rear (Figure 17). Concrete foundations were observed surrounding the outer walls of the structure. The building had been completely covered by medium brown sandy soil of around 0.4m in thickness, with soils sealing the front and rear access consisting of ballast, brick waste, metal and concrete (Railton 2010; Lilley and Lowman 2009).

Air Raid Shelter No's. 2, 3, 4 and 6 were all of a similar earth-covered design, however at the extreme north end of the survey area was Air Raid



Figure 17. Air Raid Shelter No. 1, after the removal of its earth covering.

Shelter No. 5 which was different to the other five recorded on the site. This example consisted of an earth-covered mound approximately 16m in length, 10m wide and standing 2m high, at the north end of a 70m-long earth ridge. The entrance to this shelter was exposed, and comprised a 1.8m-high, 0.90m-wide square entrance with a concrete lintel, leading to an L-shaped entrance passage. This shelter was the only one noted during the survey where an escape hatch was observed, constructed from brick with an iron door, although a thorough assessment was not possible due to ground cover and lack of access to the interiors.

The Romano-British Landscape

The initial archaeological evaluation, which consisted of the excavation of 65 trenches across the site, was undertaken in order to establish the nature and extent of archaeological remains within the vicinity, the trenches being located to target specific remains of the marshalling yard infrastructure and less obviously disturbed parts of the site where there was the increased likelihood of the survival of earlier sub-surface archaeological features (Cavanagh 2011).

The archaeological work revealed several Romano-British features consisting of a series of pits in the central part of the site (Area 1), and possible linear features on the north side of the site, as well as substantial boundary features and track ways in the southern part of the site (Area 2) (Figure 2).

The pits in Area 1 were all sealed by modern clinker topsoil, there being no original subsoil coverage. It is therefore likely that they had suffered some degree of vertical truncation during the establishment of the railway yard, this fact accounting for the relatively shallow depth of the features. All the fills were relatively similar in composition, with little obvious organic content. Whilst a sequence of excavation could be discerned within each group, the similarity of the fills and the morphology of the features suggest that they represented a single phase of archaeological activity, perhaps relating to the quarrying of gravel. Limited pottery finds from several features would

suggest that this activity was Romano-British (1st to 2nd century) in date. A single linear feature in Trench 51 (on the north side of the site) also contained possible Iron Age hand-made pottery, suggesting the presence of an earlier phase of activity at the site.

The Area 2 excavation revealed a series of five ditches that are believed to relate to further Romano-British activity and demonstrate the development of the early landscape (Figure 7). The most substantial ditch (Ditch 1) was between 3.4m and 3.9m wide and 0.7m to 1.0m deep, with a concave profile, aligned northwest to southeast. This contained ceramic material dating from the 1st–2nd century and to the 4th century, suggesting a long period of use. The size of the ditch indicated that this was a substantial boundary feature.

To the south of this feature two parallel northeast to southwest aligned ditches appeared to define a c. 3.3m-wide trackway. Ditch 2 turned eastwards at its northern end running parallel with Ditch 1, while Ditch 3 turned westwards at its northern end, thus forming another 6m-wide trackway when combined with Ditch 1 (Figure 7). Sections were excavated at key points along these ditches, showing these were continuous. The northwest to southeast sections of these ditches were 1.1m to 1.4m wide and 0.5m to 0.6m deep, with a rounded profile. The northeast to southwest trackway ditches were somewhat similar in size and depth, but with a V-shaped profile. These ditches contained 1st to 2nd century Roman pottery including ten sherds of heavily abraded Samian ware (Webster 1996, 47; Dresser (DR).37 form). Ditch 3 cut (and therefore post-dated) another undated linear feature (Ditch 4). To the north of these was a further ditch (Ditch 5) which had a similar alignment, and probably formed the continuation of a Romano-British field system.

The pottery evidence was insufficient to precisely date the sequence of ditches. However, the principal ditch (Ditch 1) is the largest of the east-west features and runs unbroken across the site. This northerly ditch could be identified as far east as Trench 18, whilst no trace of the southern ditch (Ditch 2) was identified to

the east of Area 2. This would suggest that Ditch 1 was the earliest feature in this area, with the southern ditches (Ditch 2 and Ditch 3) being added at a later date to form a T-junction. These ditches (along with Ditch 4) are indicative of a field system, which was established around an existing boundary ditch (Ditch 1), also providing access tracks between the fields.

Interestingly, the northeast to southwest trackway corresponded to the alignment of the Fen Causeway Roman Road, and broadly followed the more southerly of the two routes projected from crop marks to the west of the site. However, there was very little evidence for a surface between these parallel ditches, apart from a 0.22m-deep gravel and silt deposit which was observed in section in Trench 12, and is believed to be associated. The deposit had a marked camber and was situated at a maximum height of 4.46m AOD, directly overlying the natural subsoil. Following the stripping of Area 2, further patches of gravel surfacing were noted. Test pits cut into the surface showed it to be 0.12m deep and with the top of the gravel at a mean level of 4.40m AOD. This deposit was sealed by a sequence of shallow sandy clay, clay silt and silty clay deposits. The latest fill appeared to be relatively modern, with a high organic content and, together with the underlying sequence of fills, was indicative of a prolonged period of natural post-abandonment silting.

The initial interpretation was that this trackway was indeed a section of the Fen Causeway Roman road, which was established in the 1st or early 2nd century AD (Fincham 1998, 26). However, reassessment of the Romano-British features excavated has led to the conclusion that the excavated remains are unlikely to represent the Fen Causeway Roman road as originally suggested. Instead they appear to be an agglomeration of later features, relating to the development of a Romano-British field system. The northern ditch in particular was more substantial than those usually associated with Roman roads. However, it is certainly possible that these boundary features respected (and therefore may have post-dated) the alignment of the Fen Causeway Roman road.

Archaeological evidence for the Fen Causeway Roman Road has been recorded to the rear of 92 Elm Road, March, located to the east of the Whitemoor Marshalling Yard site. Here, an archaeological evaluation in 2005 located the Causeway on the northern side of the site, close to the junction of Elm Road and Dagless Way in Trench 4. The road was characterised by a layer of gravel, 0.10m thick, lying over the thin alluvial soil which is found in this area. A roadside ditch measuring 1.58m in width and 0.74m deep with a flat base was excavated on the south side of the Causeway. A single sherd of Samian pottery of late 2nd to mid-3rd century date was recovered from this ditch. No ditch was found on the north side of the road, although it was noted that this was likely to have existed outside the area under investigation. The southern ditch was thought to have been truncated, probably during ground reduction for the construction of the property (Weston and Williams 2005).

The excavation at Whitemoor Sidings has provided an insight into how the Fenland was organised in the Romano-British period, although the exact location of the Fen Causeway Roman Road remains uncertain. Based on the nature of the excavated ditches, the recorded trackways may have only constituted access routes between fields or enclosures.

Conclusion

The archaeological work at Whitemoor Marshalling Yard has revealed evidence for an early phase of activity at the site dated to the Romano-British period. This includes a series of pits and linear features to the north of the site, some of which may be Iron Age in date, and a series of ditches to the south which appear to define a series of routeways, and part of an extensive Romano-British field system.

The Romano-British activity observed within the site boundary should be viewed in the context of the wider landscape. Romano-British ditches have been recorded to the east of the current site (Hall 2004), to the south-west at Norwood Road (Cooper 2007) and to the west of Hundred Road (Hutton and Standing 2008). At the latter site, additional features in the form of pits and a watering hole that had probably been re-dug on a number of occasions were similar to features observed at the Whitemoor Marshalling Yard site. Evidence of Romano-British settlement has been forthcoming from sites such as Wimblington Road (Cooper 2003) to the south and Longhill Road, March to the north-east (Atkins 203). Both of these sites, which lie respectively on the southern and north-eastern limits of March island, have also provided evidence of Romano-British salt production. A clear picture is thus emerging of a Romano-British agrarian landscape, in which rectangular field systems bounded by drainage ditches flanked the route of the Fen Causeway Roman road and its subsidiary tracks.

Modern features of archaeological interest were also recorded comprising the remains of the infrastructure of a former railway marshalling yard. Evidence for track beds were noted in several locations, and it is likely that these related to the earliest phases of development on the site in the second half of the 19th century. There remains, however, consisted only of the ash-filled impressions of uprooted railway sleepers, together with deposits of chalk bedding material. Indeed, it is notable that no *in situ* rails or sleepers were encountered in any part of the site.

With the exception of the early track beds, the excavated and recorded railway features dated to the extensive development of the Down yard at Whitemoor Marshalling Yard in the first half of the 20th century. Of particular interest were the two backfilled turntables and the inspection pits, but other railway features that survived below ground level included the remains of two trans-shipment sheds, administrative buildings, locomotive workshops and water tanks. In general, all the railway structures had been demolished down to foundation level and the associated

machinery and fittings salvaged, so that there was very little diagnostic evidence left of their original functions.

The disappearance of railway infrastructure which no longer serves a useful function on the modern network, particularly those related to the building and servicing of locomotives, has been recently highlighted (Palmer *et al.* 2012, 258). Marshalling yards are particularly vulnerable; at the time of Nationalisation there were 94 hump marshalling yards, but by 1972 there were only 35. Most of the artefacts relating to marshalling yards have been destroyed.

Stratton and Trinder state that marshalling yards are 'monuments to the need for complex sorting of wagons that were intrinsic to conservative patterns of railway operation, and to the grandiose ambitions of the 1950s' (Stratton and Trinder 2000, 167). Railway marshalling yards remain a feature of the British landscape; some have been adapted to meet different demands of modern railway operations, whilst others have been used for housing, for example at Banbury. Other sites such as Whitemoor in Cambridgeshire, and Kingmoor in Cumbria, have become overgrown. Nevertheless, the present project has demonstrated that these can hold a surprising wealth of information regarding the technological and operational aspects of these sites.

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Glossary

from *The Archaeology of Railways* by Richard Morriss, 2003

Down: The direction of most routes are referred to as being 'up' or 'down' rather than geographic. 'Down' usually means down from London or from another major centre.

Dunnage: Packing material used to protect cargo during transportation

Hump Yard: Marshalling yard in which shunting can be carried out by gravity by building a rising gradient and allowing individual wagons to roll down from the top into the required siding.

Marshalling Yard: Sidings in which trains are made up or 'marshalled' by shunting wagons around. Larger ones

have arrival, shunting and departure sidings.

Reception Sidings: Sidings in which goods trains can be accommodated away from running lines to await sorting in the marshalling yard.

Siding: A section of track used to store, load or marshal trains or separate pieces of rolling stock.

Sorting Siding: Main sidings in a marshalling yard in which individual wagons are sorted and coupled into trains.

Turntable: Short rotating section of track on which rolling stock can be turned around. Used especially from locomotives but in early days of steam also for wagons and coaches

Up: Opposite direction to 'Down', usually meant up to London or another major centre or junction.

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Fieldwork in Cambridgeshire 2012

Sarah Bultz, Sally Croft and Elizabeth Popescu

The work outlined below was conducted for a variety of reasons, including development control derived projects, emergency recording and research. All reports cited are available in the Cambridgeshire Historic Environment Record, Cambridge, for public consultation. Many of the reports are available in digital format from the Grey Literature Library at the Archaeology Data Service

<http://ads.ahds.ac.uk/catalogue/library/greylit>
or Heritage Gateway

<http://www.heritagegateway.org.uk/gateway>

Reference numbers for Scheduled Monuments and Listed Buildings are taken from the National Heritage List for England.

<http://list.english-heritage.org.uk>

Abbreviations

ALBION Albion Archaeology
ALL Allen Archaeological Associates
AOC AOC Archaeology Group
APS Archaeological Project Services
AS Archaeological Solutions
ASE Archaeology South East
CAU Cambridge Archaeological Unit
CgMs CgMs Consulting
ECC Essex County Council Field Unit
GEO Geo-Environmental Investigations Ltd
HN The Heritage Network
IE Independentus Excavatorum
JMS John Moore Heritage Services
MAS Midland Archaeological Services
NAU Norfolk Archaeology Unit
NHA Northamptonshire Archaeology
NHLE National Heritage List for England
OA East Oxford Archaeology East
PCA Pre-Construct Archaeology
SCCAS Suffolk County Council Archaeological Services
WSSX Wessex Archaeology

Alconbury, Alconbury Enterprise Zone

TL 1960 7700 (OA East Report 1382)

R Atkins

Iron Age features were encountered in five trenches at this site, with domestic type assemblages being recovered from two areas. The Late Iron Age remains found in the 2001 evaluation (CHER MCB14697) lay some distance from these two 'domestic' areas, suggesting the presence of three different farmsteads or family groupings within an extended type settlement. Early to Middle Roman remains were found, comprising a very dense area of features (pits and/or ditches) dating up to at least the end of the 2nd century AD. Further Roman remains were found between the other two latest Iron Age domestic areas revealed by the evaluation.

Bartlow, The Walled Garden, Bartlow Park

TL 5857 4502 (AS report 4073)

S Quinn & M Stoakley

Two trial trenches excavated prior to small-scale construction revealed evidence of Roman activity in the form of five pits and an unidentified silty layer. Three of the pits were undated and two contained a few sherds of 2nd century domestic pottery. This coincides with the villa (CHER 06164) which is in close proximity to the site, the Roman burial mounds (CHER 09838) and cemetery (CHER MCB16319) at Bartlow which are also dated between the late 1st to 2nd centuries AD.

Bassingbourn, Well Head Area

TL 3294 4294

V Hurst

Using aerial photographs and other records, 250 acres were investigated to attempt to show how the area has changed over time. There are remains of a large co-axial field system aligned roughly north-south dated to the medieval period. The original course of the river has been altered; the original line can be seen on the aerial photographs and is proven on the Enclosure Map of 1563. Disused tracks and pathways across the fields are also evident, showing settlement use of the area.

Bassingbourn-cum-Kneesworth, Kneesworth House Hospital

TL 3495 4415 (AOC report 30848)

I Hogg

Two phases of archaeological investigation were undertaken ahead of proposed development of a new ward. A ring of postholes and a line of large postholes suggestive of a prehistoric roundhouse and palisade were recorded although no material culture was retrieved from these features. Several short phases of Roman activity represented the majority of the archaeological features recorded, of which three phases were identified through the different types of pottery recovered. Small scale settlement and agricultural activity is represented throughout these phases. A worked bone comb of probable Saxon date was also recovered alongside several quarry pits as the only evidence of post-Roman activity.

Bottisham, Bendyshe Farm

TL 5440 6040 (NHA report 12/44)

J Brown

A series of open area excavations was carried out at Bendyshe Farm. The site is located on the north-west side of a former medieval moated site (NHLE 1019175). A Late Neolithic/Early Bronze Age pit cluster was uncovered along the base of the slope, and a single pit contained Roman pottery. Middle to Late Saxon boundary plots were revealed indicating some relationship to the cultivation of the land. During the early medieval period it appears that the land was reorganized into linear land plots divided by ditches. Ridge and furrow was identified in the north-west extent of the site. From the 16th century the eastern part of the area was within the moated area for nearby Bendyshe House and a number of latrine pits were excavated in this area. This was in use until the 19th century redevelopment of the building.

Burwell, Burwell Lode Bridge

TL 5634 6897 (APS report 43/12)

M Peachey

An archaeological evaluation comprising three trial trenches was undertaken in advance of construction of a bridge. The evaluation revealed patchy buried soils beneath peat. Sampling of these revealed a broken Mesolithic flint blade and blade flake.

Burwell, 60 Reach Road

TL 5846 6595 (ALL report 2012090)

R Peters

An archaeological evaluation was undertaken in advance of residential construction. Three boundary ditches were identified but remain undated as no datable material was recovered from them.

Burwell, 70 Reach Road

TL 5836 6601 (ALL report 2012068)

M Piirainen

An archaeological evaluation revealed an undated pit, two ditches of post-Roman date and a modern posthole relating to a 1970s shed.

Cambridge, Land off Auckland Road

TL 4589 5890 (CAU report 1099)

S Timberlake

An archaeological evaluation consisting of a single 11m long trial trench was undertaken. A truncated surface of early post-medieval levelled and re-deposited backfilled quarry fill was uncovered with traces of cut and re-cut quarry pits within it. The finds assemblage recovered from the pits included coarse ware pottery of 15th–16th century date. Redeposited within the quarry backfill were five Mesolithic flints including a core rejuvenation flake and a single microlith and three Early Neolithic flint flakes and a blade.

Cambridge, Castle Hill Mound, Shire Hall

TL 4460 5917 (OA East report 1335)

J Fairbairn

Test-pits and a watching brief along the inside of the retaining wall surrounding the Castle mound (NHLE 1006905) found evidence of deliberate backfilling and the construction cut for the mound's retaining wall, as well as evidence of the original motte material. A small assemblage of pottery was recovered dating to the 3rd to 19th centuries.

Cambridge, 4–5 Castle Street

TL 4460 5910 (CAU report 1064)

C Cessford

An archaeological excavation revealed that despite extensive 19th–20th-century disturbance, Roman deposits and features of 1st–4th century date including a well constructed cobbled surface survived under the basements. In the rear yard a 3.3m deep stratigraphic sequence spanning the 12th/13th–20th centuries was present with features including a large 12th–13th-century quarry pit, a 14th–15th-century oven and a 16th–17th-century garden/horticultural soil, all features typical of the rear yard area of an urban plot. In the 17th century a building with a substantial cellar was constructed; this remained until the current standing buildings were erected in the mid-19th century.

Cambridge, Clay Farm Rising Main Sewer

TL 4658 5468 (OA East report 1422)

J Newman & T Phillips

A linear excavation strip revealed a number of ditches which correlate with previously recorded cropmarks. All features were undated, however given the dating of some of the closest field systems, both Middle Bronze Age and Late Iron Age/Roman dates are likely. An undated ditch lay outside the main area.

Cambridge, Intercell House, Coldhams Lane

TL 4656 5891 (OA East report 1424)

R Atkins

An evaluation found an area of quarry pits which were presumably dug to recover sand and gravel for nearby construction. A few finds including pottery dating between AD 1350–1400 or later came from the pits. Activity may have restarted in the mid- to late 17th century, since a layer dating to this period

was recorded within two adjacent trenches. A clunch wall, probably dating to *c.* 1700, ran perpendicular to Coldhams Lane frontage. This may represent a boundary wall or part of a homestead documented as belonging to the overseers of the poor of Barnwell in the Enclosure Awards and a map dating to 1807–1812. Two 18th-century pits were found in an area that the 19th-century maps suggest was a courtyard to properties fronting Newmarket Road. There was extensive evidence for buildings within the site that are likely to date from the mid-19th century.

Cambridge, Jesus College, Chapel Court

TL 4530 5889 (CAU report 1098)

C Evans, R Newman & J Tabor

An archaeological watching brief revealed a number of features all of which were modern; two brick drains and a foundation wall. Two discrete concentrations of disarticulated human bone were also recorded within the layers of made ground. The first concentration of human bones appeared to be dominated by long bones and fragments of pelvis and skull. The first concentration of human bones appeared to be dominated by long bones and fragments of at least three skulls. The second concentration of human bone was once again identified as long bones, skull fragments and pelvis fragments as well as fragments of ribs and spine. The human bone was clearly out of context and must derive from burials disturbed by previous ground works at the site. The human bone was reburied on site and there was no evidence of *in situ* or articulated human bone.

Cambridge, 22 Mere Way

TL 4504 6085 (IE report)

W Hughes

A test pit was excavated at Mere Way on what is the reputed line of the Roman road from the Castle Hill settlement (NHLE 1006905) to Ely. No Roman features were revealed, but a redeposited Bronze Age arrowhead was recovered from the test pit, along with small quantities of modern material. Due to the amounts of redeposited material from the building work in the 1950s it was decided that it was unlikely that any original features from the Roman period were present.

Cambridge, Merton Hall, Northampton Street

TL 4449 5894 (ALBION report 2010/106)

R Wardill, C Meckseper & A Lodoen

Archaeological monitoring and recording was carried out at Merton Hall during refurbishment and repair works. During excavation, the development history of the hall was identified. The remains of walls indicating the addition of the bay windows and the removal of internal wall divisions could be seen along with other remains indicative of old floor surfaces and supporting structures. Human skeletal remains from at least 10 individuals dating to the late Roman period were recovered from the area. These include the complete inhumation burial of one female and the disturbed remains of a juvenile burial with fragments of Nene Valley ware pottery. Previous

building work at the School of Pythagoras and the Cripps Building revealed further evidence of burials and can confirm the presence of a Roman cemetery in the area. Radiocarbon dates from the human bones and pottery evidence place the cemetery 1645 +/- 40BP and 1720 +/- 40BP.

Cambridge, Neath Farm, Cherry Hinton

TL 4883 5741 (CAU report 1108)

A Slater

A large scale excavation took place prior to the construction of Neath Farm Business Park. Across the 0.57 hectare area, seven phases of activity were identified: Romano-British through to the late post-medieval period. A series of ditches, pits and enclosures were revealed during the excavation throughout the different phases. The area appears to have been a highly populated settlement during the Roman period, but it had reduced in size as the medieval period starts to develop. This corresponds with transfer of the settlement core to the area around St Andrew's Church in the medieval period. Therefore this site began to fall out of use towards the mid-late medieval period.

Cambridge, Perse School

TL 4627 5603 (OA East report 1419)

A Haskins

Various trenches revealed tree throws that may relate to a tree clearance episode in the Early to Middle Bronze Age. The trenches also uncovered ditches on three alignments, probably dating to the Iron Age and Early Roman periods. Some of the features were probably associated with the nearby Bronze Age field systems and settlement at Clay Farm, which lies to the immediate south-west of the site.

Cambridge, 5 Spens Avenue

TL 4358 5781 (AS report 4049)

G Barlow & J Bampton

An evaluation of three trial trenches was undertaken prior to the redevelopment of the site. The trenches revealed the site to be covered in a series of 18 large shallow pits, likely used as quarry pits for the extraction of sand and gravel. Two of these pits contained three sherds of Romano-British pottery in a slightly abraded condition which can be dated between the 1st and 4th Centuries.

Cambridge, St Matthew's Primary School, Norfolk Street

TL 4592 5841 (OA East report 1437)

G Rees

An excavation was carried out after human remains were encountered during construction of new school buildings. The remains of ten individuals were uncovered in graves, aligned north-north-east to south-south-west, excavated to two metres below the ground surface. Four of the burials were those of neonates, whilst five were juveniles. A single adult female skeleton was tentatively identified by a headstone found on the surface of the grave. All of the burials had been interred in wooden coffins with

iron handles showing little decoration. Two vaulted brick tombs were also uncovered, perhaps indicating higher status or wealthier family groups within the cemetery. The latter appears to have been used for only a short period, probably in the 1820s and 1830s, and was associated with a small Baptist Chapel.

**Cambridge, Great Shelford, Isleham and Swaffham
Bulbeck ACA test pits**

A series of test pits were excavated at Ridley Hall in Cambridge and in the villages of Great Shelford, Isleham and Swaffham Bulbeck in 2012 by school children, teachers and members of the general public as part of the University of Cambridge Archaeology Department Higher Education Field Academies Programme. Pottery sherds dating from the Roman to post-medieval periods were recorded.

Chatteris, Cromwell Community College

TL 3957 8520 (OA East report 1355)

R Atkins

This excavation exposed almost the entirety of a small unenclosed settlement, predominantly dating to the Early Iron Age, although an earlier, potentially Middle Bronze Age ditch may have been incorporated into its layout. The settlement lay on flat land c. 1km from the fen edge to the west. Early Iron Age features comprised pits, postholes, and possible boundary ditches, forming part of a relatively short-lived settlement. Many of these features were truncated by medieval and later post-medieval ploughing; although the surviving postholes did not form any obvious structures, two possible 'four-post' structures were suggested.

Two radiocarbon dates, taken from cow and sheep bone recovered from a pit, produced a date range of mid-6th to 5th centuries BC. This pit also contained large quantities of unabraded Early Iron Age pottery from a few vessels. The remaining finds evidence included fired clay objects, such as a possible loom weight and fragments of clay lining from ovens or kilns that indicate domestic activity. After the abandonment of the Iron Age settlement it appears that the site remained in agricultural use until the present day; the presence of ridge and furrow indicates medieval and post-medieval farming.

Chatteris, Warboys Airfield Industrial Estate

TL 2971 7866 (APS report 2012/2)

R Palmer

An aerial photo analysis was undertaken of 102 hectares. Archaeological features identified as ridge and furrow remaining from medieval cultivation were recorded alongside airfield structures such as, tracks, buildings and fences, from its World War II and Cold War phases.

**Chittering, Denny Lodge Business Park, Wind
Turbines**

TL 4974 6946 (APS report 133/11)

M Peachey

Archaeological evaluation prior to wind turbine development revealed a single undated field boundary

ditch present on the 1st edition 1887 OS map, parallel to the Upper Mill Drain to the east.

Coveney, land north of Jerusalem Drove, Wardy Hill

TL 4656 8278 (OA East report 1433)

T Fletcher

An archaeological and geoarchaeological evaluation was carried out as part of a scheme to create a 200 hectare wet grassland habitat area. Prior to evaluation, geophysical and aerial photographic surveys were conducted which identified potentially surviving archaeological remains. A programme of field walking was also undertaken on one of the five investigated fields which yielded two Early Neolithic flint tools and post-medieval pottery. The investigation recorded post-medieval boundary ditches and a possible small ring ditch gully representing what is likely to be a broadly contemporary shelter, similar to a shieling.

Duxford, land east of Moorfield Road

TL 4822 4702 (PCA report R11272)

K Anderson & M Hinman

An evaluation consisting of 12 trial trenches was carried out. Four of the trenches contained archaeological features comprising ditches and pits. Sherds of pottery dating from the Late Iron Age/Early Roman period were recovered from the south-western corner of the site. In the north-eastern corner of the site, one boundary ditch was found to be of modern date but no datable finds were recovered from any other features. An aerial photographic survey was undertaken prior to evaluation, but identified no archaeological features. A geophysical survey was also undertaken, but most features identified appeared to be modern ferrous disturbances.

Eltisley, Manor Farm

TL 2730 5930 (OA East report 1338)

R Atkins

A watching brief recorded a dense concentration of Roman pits and ditches in an area directly to the north of the moat (CHER MCB1418, NHLE 1019638) surrounding Manor Farm. Two undated pits within the courtyard of the moated site were sealed by a post-medieval and/or modern cobbled and brick surface which probably related to a series of late 18th- to early 19th-century barns located within the eastern side of the moated site.

Eltisley, Old House

TL 2681 5964

S Kemp and T Way

An archaeological survey was carried out alongside historical research on the area of possible water gardens at the Old House (NHLE 1163469). The Old House was constructed in 1612. It is an L shaped framed building of two storeys and attics, comprising a north and south range with a cross wing to the south. Attached to the south end is an outhouse used as a kitchen, either original or an early addition. The areas of water shown on the enclosure plan of 1865

equate to those described by the RCHM report (1968) as the two parallel east-west ditches and the third, larger, east-west ditch/pond. There is also indication of standing water fronting the road.

Ely, 89 Cambridge Road

TL 5347 7966 (AS report 4060)

S Quinn

Archaeological trial trenches were excavated prior to the construction of two detached dwellings. They revealed one post-medieval ditch and modern rubbish pits and post holes. Several pieces of 17th–18th century pottery were recovered from the features.

Ely, Southern Bypass

TL 5396 7821 (OA East report 1341)

T Phillips & M Webster

A borehole survey revealed an underlying sequence of clays, including Kimmeridge and Boulder Clay, sealed along most of the route by a layer of peat. The peat was not present at the western end of the route, providing an approximate location for the fen edge. One window sample contained a slightly compact layer of sand and gravel 1.2m below ground level, which could indicate the presence of a gravel outcrop or 'island'.

Ely, St Mary's Church

TL 5380 8020

O Bone

During work by building contractors to improve disabled access, a medieval stone coffin was uncovered under the stone steps at the threshold of the north porch of St Mary's Church, Ely. It was decided to record and assess the stone coffin *in situ* and make slight redesigns to the entrance. The coffin was first revealed in the 1870s as part of restoration on the porch. On rediscovery in 2012, the south side of the coffin wall and half the fill to a depth of between 80 and 150mm and the top of the south side of the stone of the coffin had been robbed away and Victorian bricks laid in place to make part of the floor of the porch. The coffin is estimated to be 650mm at its widest point with no sign of an intact skeleton. The coffin is constructed of limestone, tapered and with a circular cut-out for the head. The top of the head end of the coffin is approximately level with the floor of the level of the porch, while the foot end slopes down slightly towards the east. It is orientated east-west with the head end to the west. One of the tapered sides is placed in line with the entrance to the north porch and continues under the stone of the doorway on the eastern side, thus pre-dating it. The porch is thought to be early 14th century. Following the discovery of the coffin, advice was sought from the Ely Diocesan Advisory Committee for the care of churches, who advised preserving the coffin *in situ*. The coffin was left *in situ* and covered in soft lime mortar to bed the overlaying threshold stone. Because the coffin is to be left *in situ*, the half of the coffin fill that has not been replaced with bricks was left unexcavated. The lowering of the path also uncovered about ten 16th or

17th-century bricks found about 2m from the porch entrance, which have been interpreted as later make up of the path paving.

Fen Ditton, Blue Lion, 2 Horningsea Road

TL 4861 6026 (PCA report 11270)

T Woolhouse

Trial trenches were excavated prior to the construction of a lorry/car park. A few small pits and gullies were uncovered in several trenches. The most significant feature was a large ditch aligned north-west to south-east on the east of the site. The ditch has been deliberately filled in with modern hardcore and compacted chalk. It corresponds with the projected course and alignment of the Fleam Dyke, therefore is likely to be part of it. It had been levelled when the public house was built in the 1950s/60s or during later landscaping of the beer garden and car park.

Fordham, Land at Fordham Road/Newmarket Road

TL 6298 6893 (SCCAS report 2012/081)

A J Craven

Archaeological evaluation was carried out in advance of redevelopment. Two ring ditches were uncovered which had been indicated by aerial photography. Dating evidence, consisting of worked flint, pottery and animal remains, suggests a Late Neolithic/Early Bronze Age date. A disturbed burial was uncovered in the centre of one of the ring ditches, containing the partial remains of a crushed human skull. The remains were recorded and left *in situ*. A large assemblage of Late Neolithic/Early Bronze Age and Bronze Age pottery was recovered from this feature, representing nearly half the sherds recovered from the whole site. Some of the pottery is decorated with square-toothed-comb impressions, typical of Beaker pottery. A sizeable assemblage of Beaker sherds from across the site indicates a significant domestic activity in the area. Other pits were investigated across the site but failed to contain any datable material.

Fordham, Turner's Yard

TL 6298 6892 (OA East report 1425)

N Gilmour

Two Early Bronze Age barrows were excavated following evaluation (see above). One had an internal diameter of c. 18.5m and a single collared urn containing a cremation deposit and a small bronze knife or dagger was found within it. Finds from the ditch of this barrow were limited, comprising a few struck flints and several sherds of Bronze Age pottery. A single pit excavated adjacent to this barrow contained a significant quantity of beaker pottery, struck flint, animal bone and a fragment of a Langdale axe.

The second barrow was larger, with an internal diameter of c. 27m. At the centre of this feature was a crouched burial, heavily disturbed by burrowing. In the base of the barrow ditch a second inhumation was found. Wedged into a narrow grave, the individual was placed on their back, with knees pointing upwards. Within the fills of the barrow ditch were significant deposits of Middle and Later Bronze Age and

Early Iron Age finds. The assemblages comprise pottery, struck flints, animal bone, disarticulated human remains, spindle whorls, bone pins, bone needles and a possible stone gaming counter. A total of c. 70kg of struck flints was recovered from the barrow ditch.

Between the two barrows was an extensive cremation cemetery in which 21 cremations and cremation related features were excavated. The cemetery is thought to be Middle or later Bronze Age in date and this will be tested by carbon dating. The cemetery is unusual for the Middle Bronze Age as no urns were recovered and the individual deposits were very widely spaced.

Fowlmere, Land off Thriplow Road

TL 4258 4612 (AS report 4046)

S Rathbone

An evaluation consisting of three trial trenches was carried out prior to the construction of ten dwellings. The site was located on the London to King's Lynn Road during the height of the 17th century wool trade, and was of considerable importance. Cropmarks representing archaeology of an unknown date are present to the north and east of the site. In one of the trenches, two undated ditches were revealed running parallel to each other, however there were no datable material or finds recovered from any of the features.

Godmanchester, 1 London Road

TL 2477 7024 (OA East report 1374)

J House

A sub-surface brick structure ran outside of the excavation area and formed a narrow pit, possibly a drain or a machine wheel pit. Several post-medieval deposits were encountered within the 1m by 1m test pit: undated earlier deposits were also observed. Residual Roman pottery was recovered from later contexts.

Godmanchester, Godmanchester Primary School

TL 2444 7082 (OA East report 1379)

J Fairbairn

Following on from a geophysical survey, a community dig opened three trenches on the supposed route of Ermine Street. Rubbish pits and postholes of Roman date were found, as well as traces of a Roman gravel surface which may be either associated with Ermine Street or the *Via Devana*.

Great Gransden, Rectory Farm

TL 2701 5557 (OA East report 1395)

L Bush

Evaluation revealed evidence for the foundations of a wall which contained residual Roman pottery, along with a shallow pit tentatively interpreted as a sunken-featured building. This contained animal bone fragments and a worked bone pin beater of possible Late Saxon date. Environmental samples taken from the pit recovered large amounts of charred grains. Two ditches on separate alignments were also recorded, both of which contained early medieval pottery. The larger of the two also contained animal bone and a large amount of daub. Environmental samples

from both ditches again produced high numbers of charred grains. At the eastern end of the trench lay a quarry pit which contained post-medieval tile and early medieval pottery, implying that it had cut through further archaeological features.

Great Staughton, Grafham Resilience Project

TL 1523 6598

A Deegan

An aerial photographic assessment was undertaken over an area of 380 hectares. Most of the features identified appear to date to the medieval period or later. These consist of field systems including ridge and furrow, plough headlands and associated ditches. However cropmarks close to Highfield Farm may indicate rectilinear enclosures and ditches of Iron Age and/or Roman date.

Great Stukeley, The Stukeleys, Grange Farm

TL 2300 7500 (OA East report 1359)

T Fletcher

Archaeological trenching revealed a series of regularly spaced ditches, all approximately 0.70m wide and 0.20m deep, orientated north-west to south-east and north-east to south-west. The orientations are likely to relate to the subtle differences in the topographical landscape, aligned to aid drainage. These ditches were also encountered during previous investigations to the north of the site during 2000 (CHER MCB15840), where they were interpreted as Middle-Late Iron Age arable cultivation features. The ditches were noted in trenches across the whole site indicating large scale arable use – they were also identified on the geophysical survey and were thought to represent post-medieval ridge and furrow. Despite thorough investigation and sampling, no dating evidence was retrieved from this phase of work.

The evaluation also identified a number of moderately sized boundary ditches, dated mostly from pottery evidence to the Middle and Late Iron Age. These ditches correspond to the geophysical survey and are thought to form part of two small settlement enclosures. The extensive outlying fields with cultivation 'strips' may be associated. Whether or not they are contemporary would rely on more dating evidence being retrieved, however the location of these Middle-Late Iron Age sites fits in well with contemporary settlement sites excavated to the immediate south at the Ermine Business Park (CHER MCB19110) and to the north at Alconbury Airfield (CHER MCB1548) and have the potential to enhance current knowledge of the Middle-Late Iron Age landscape in this area.

Haslingfield, Cantelupe Solar Farm

TL 541405 253805 (WSSX report 78101.03)

G Chaffey

Archaeological evaluation was carried out prior to the construction of a solar farm. Archaeological features found included late prehistoric and undated ditches. A number of tree throws were also recorded, particularly in the northernmost field, and are likely to be associated with the orchard which occupied

the field from the early 1900s. Two separate areas of modern disturbance were noted and appear to be related to quarrying and to dumped material from the construction of three reservoirs in the 1970s to the immediate east of the site.

Haslingfield, 30 New Road

TL 4085 5249 (AS report 3610)

G Barlow

Archaeological evaluation was conducted prior to the proposed demolition of an existing house and out-buildings and residential development. Haslingfield Hall (NHLE 1013283) is located c. 450m to the south-west of the site. The evaluation revealed a range of features comprised of ditches, gullies, pits and quarry pits. Several phases of activity were identified; Late Iron Age, medieval (10th–12th centuries) and a 15th–17th century. A series of large post-medieval quarry pits could have destroyed earlier features.

Hemingford Grey, London Road, St Ives Motel

TL 3074 7029 (PCA report 11225)

J Janulewicz

Five trial trenches were excavated to assess archaeological implications prior to development of the site. The termini of two prehistoric ditches were identified. The first terminus was part of a ditch which was aligned roughly east-west and the second terminus was part of a ditch aligned north-south. Two small sherds of Bronze Age pottery were recovered from one ditch, the fabric and distinctive colouring of which suggests that they may be Late Neolithic or Early Bronze Age Beaker in type.

Hinxton, Hinxton Hall

TL 4983 4479 (OA East report 1332)

Helen Stocks-Morgan

An evaluation revealed a posthole of probable medieval date and two ditches possibly associated with post-medieval strip cultivation in one of the trenches. A single posthole and ditch, both of which were undated, were recorded within another trench.

Horningsea, Roman structure at Cambridge Plants Nursery

TL 4967 6357 (IE report)

W Hughes

Based on the results of a geophysical survey (ECB2963,2007) four areas most likely to be kiln sites were chosen for trench locations. An oven/bake house was revealed lined with fired clay and scattered with sherds of pottery. A complete Nene Valley colour coated flagon was also recovered from the area. Towards the north of the kiln a possible shelf of fired clay was uncovered. Other pieces of pottery and a couple of metal items were recovered from the evaluation.

Horningsea, St Peter's Church

TL 4914 6268 (OA East report 1411)

T Fletcher

Proposals for new lavatory arrangements led to the removal of plaster from the western wall of the south

aisle of this church. This revealed a blocked doorway constructed of clunch. On the other side of the doorway is a small area referred to as the Sexton's 'shed' that is believed to have been constructed in the 19th century from a design by Thomas Jeckyll made in 1866. A full descriptive and drawn record was made of the exposed blocked-up doorway before 300mm of the upper infill was carefully removed. This investigative work revealed that the doorway had been blocked up using lime mortar with inclusions of large flint stones, clunch blocks and fragments of 18th-century peg tile. The flint and mortar infill was removed to a depth of 300mm using a hammer and chisel and the full width of the clunch doorway was revealed. The doorway is believed to be 14th century in date and contemporary within its setting in this part of the building. It may have originally provided access into a former annex which may also have dated to the 14th century (RCHM). The continuation of the 18th-century infill beyond the opening itself suggests that the wall had been repaired on the other side (within the 19th-century Jeckyll extension) at the same time that the door was blocked up.

Huntingdon, land off Butts Grove Way

TL 2476 7309 (OA East report 1376)

G Rees

Archaeological features containing medieval and post-medieval ceramics were uncovered in two of these trenches and probably relate to agricultural activity. An undated ditch was also uncovered. A large amount of disturbance, including service trenches, pits and brick rubble dumps, had taken place during the construction of the extant houses.

Huntingdon, Chequers Court Car Park

TL 2410 7182 (OA East report 1388)

C Thatcher

Excavation continued from 2011. A total of ten discrete areas were investigated revealing a sequence of well stratified features and deposits that spanned the pre-medieval to post-medieval periods. Although no Anglo-Saxon features could be confidently identified, a number of undated but stratigraphically earlier ditches and a small assemblage of Middle to Late Saxon pottery recovered from later features demonstrated that the site lay close to an area of settlement. There was a marked increase in activity during the 12th to 14th century, characterised by the establishment and maintenance of a series of substantial drainage ditches. The preservation of possible bank material or a medieval cultivation layer between these ditches, in conjunction with the finds and environmental evidence, suggests that during this time the site was cultivated. The drainage of the site, in order to make it viable for agricultural purposes, clearly required a significant investment of energy and this may have been necessitated by the demand for food from the growing population of the town, which was expanding rapidly during the 'high medieval' period.

Evidence for the expansion of the town was recorded in the southern part of the site where pits,

postholes and shallow gullies typical of features in the back plots of buildings were found.

The decline of the town in the aftermath of the Black Death was also in evidence with the abandonment of the drainage ditches and slow accumulation of layers of relatively sterile soil. A slight increase in activity during the 17th century was noted in the form of two brick-built wall foundations that may have been associated with a path or a small ancillary structure.

Huntingdon, Cromwell House

TL 2370 7205 (APS report 132/11)

A Failes

Archaeological evaluation comprising two trial trenches was carried out at Cromwell House. The site is located alongside the course of the Roman road, Ermine Street, the route of which is perpetuated by the line of the current High Street. The remains of a medieval friary had previously been identified at the site. The evaluation identified a sequence of natural, medieval and later dumped deposits. These contained Roman and medieval roof tile and medieval pottery. No material directly relating to the Roman road or the medieval friary were recovered from the trenches, although the building material recovered is indicative of a building near by. A post-medieval brick structure, possibly a cellar and a modern drain were also encountered.

Huntingdon, Hinchingsbrooke, Christie Drive

TL 2200 7190 (CAU report 1076)

M Brittain

Archaeological evaluation followed closely by an excavation revealed evidence of Bronze Age to Romano-British settlement. There were residual lithic items from the Mesolithic/Bronze Age/Iron Age which suggests occasional visits to the site. Romano-British occupation began in the 1st century and ended in the 3rd century. The excavation revealed a sequence of droeways and at least three phases of rectilinear enclosures, with two incomplete ring gullies and a possible kiln or oven. However, no kiln furniture or distinguishable structure was recovered, and there were no clear signs of direct *in situ* scorching. A mixture of coarseware and fineware pottery fabrics were recovered broadly dating to the 2nd–4th century, with the exception of a single sherd of later Iron Age Ware.

Huntingdon, land behind The Longbow Public House

TL 2427 7406 (OA East report 1363)

H Stocks-Morgan

Archaeological remains which consisted of ditches orientated north-east to south-west and north-west to south-east, were present in all of the evaluation trenches. Although undated they are thought to be part of a prehistoric field system.

Isleham, Fifty Farm

TL 6351 7690 (CAU report 1102)

M Collins

Fieldwalking and trial trench evaluation was carried out prior to the construction of a reservoir.

Fieldwalking along three transects recovered finds of burnt and worked flint and some post-medieval pottery and tile. Seven trial trenches revealed several undated and modern pits and channels.

Isleham, the Recreation Ground

TL 6425 7403 (OA East reports 1369 and 1434)

G Rees

Two areas of occupation were uncovered during the evaluation stage dating to the early medieval period whilst a third may relate to medieval clunch processing. Occupation located to the south-west of the proposed development area consisted of a high density of postholes, pits and ditches. These features appear to have been bounded to the east and north by a ditched enclosure. Occupation identified to the east of the site consisted of a pit containing an articulated cow burial as well as eleven postholes indicative of houses or byres. These features were bounded to the west by a large ditch. A third area of activity to the south of the development area included a substantial chalk-filled feature which may be evidence of clunch working in the medieval period.

The site may have been part of a small holding with a primarily pastoral economy in the early medieval period. Environmental evidence suggests that fish and grain was brought in to the site whilst the cow burial indicates that livestock was kept here. This small holding may have been closely related to the nearby alien Benedictine priory and a lack of Ely ware ceramics suggests that this site went out of use around the time that the monks were moved to Linton. Clunch working may have continued on the site until the late medieval period with a sherd of Cistercian ware pottery from this area being the latest recovered from this evaluation.

The subsequent excavation uncovered activity dated predominantly to the late 11th and 12th centuries AD. A single Late Iron Age pit may indicate that a settlement of this period lay beyond the limits of excavation. The medieval activity consisted of two buildings, one post-built and one of sill-beam construction, which were probably associated with the priory. Garden plots were also uncovered, located adjacent to a large natural hollow or pond. Later activity consisted of a probable clunch-working pit which may be associated with an expansion of the village in the late 12th and 13th century.

Littleport, Land adjacent to Petrol Station, Wisbech Road

TL 5552 8750 (AS report 4126)

S Egan & P Thompson

A ten trial trench evaluation was carried out in advance of the construction of a new business park. A series of close set parallel ditches, a continuation of those recorded to the south during a previous investigation were recorded. They were all relatively shallow, aligned in close proximity and regularly spaced. No other features were identified. Early 12th to 14th century pottery sherds were recovered from the ditches as well as Late Iron Age and Roman pottery.

Manea, Westfield Road

TL 4683 8886 (APS report 86/12)

M Peachey

An evaluation comprising two trial trenches was carried out prior to residential development of the area. Two probable agricultural enclosures or drainage ditches, both on a roughly east-west alignment were revealed during the investigation. Small sherds of 11th–12th century pottery dated the features along with a small piece of daub. A pond uncovered in Trench 1 appears to have been backfilled in the 1950s with waste material from a nearby construction site.

March, Creek Road

TL 4192 9683 (ALL report 2012053)

M Piirainen

An evaluation consisting of four trial trenches was carried out in advance of the construction of 11 dwellings. The site lies within an area of Romano-British settlement, however no features dating to this period were identified. Within two of the trenches a number of linear features were dated to the 18th–19th centuries they also contained a modern pit and an undated pit. Pottery dating to the 18th–19th centuries were uncovered along with some animal remains and three fragments of clay tobacco pipes.

March, Land off Elm Road

TL 4194 9877 (ALL report 2012025)

E Oakley

A two trial trench evaluation was carried out on undeveloped land prior to construction. A small polished Neolithic axe was recovered from a single pit. The date of the pit is unclear as fragments of coal and other modern rubble were contained within it. Other features identified relate to post-medieval drainage and there is evidence of former greenhouses on the site during the 1960s.

March, Gaul Road

TL 4065 9685 (APS report 06/11)

V Mellor

Three areas of excavations were targeted over previously identified flint scatters. Large collections of worked flint dating to the Late Mesolithic and Early Neolithic date were recovered. Some middle Neolithic pottery was also retrieved along with some animal bones from domestic animals. Post holes, pits and a hearth uncovered in the excavation are suggestive of settlement, as well as a possible boundary ditch dating to the Neolithic period.

March, No. 36 High Street

TL 4174 9656 (OA East report 1400)

T Phillips

Archaeological evaluation revealed a series of probable post-medieval plough scars truncated by a post-medieval pit containing a cattle skeleton and pottery dating to the late 17th to late 18th centuries. A ditch, also of post-medieval date, was uncovered at the north-western end. The upper fill contained pottery dating to the 16th to mid-17th centuries.

March, Outbuildings at Rear of No. 112 High Street

TL 4167 9617 (OA East report 1403)

T Fletcher

Building survey noted three main phases of development: the construction of a small service wing with first floor accommodation, which may be contemporary with the main house and dated to the late 18th century; the addition of a second outbuilding with three separate rooms to the range in the early to mid-19th century; and finally the addition of a garage and outside w/c in the late 20th century. Cartographic evidence has shown that the existing early outbuildings have been unaltered since the late 19th century. The construction of the garage replaced a number of buildings which continued along this range and were in existence until at least 1971.

Melbourn, the Old Police Station, High Street

TL 3839 4495 (OA East report 1386)

N Gilmour

Archaeological evaluation revealed a series of natural features, probably solution hollows, in addition to two ditches. The latter date to the medieval and post-medieval periods. Finds include a small amount of medieval pottery, three struck flints and a small quantity of animal bone.

Murrow, Land fronting Back Road and 49 Front Road

TF 3760 0707 (APS report 145/11)

M Peachey

A small trial trench evaluation was undertaken in an area where there was extensive Roman and medieval settlement and salt production. However the evaluation identified only one pit which remains undated. No datable finds were recovered.

Over, Overcote Farm

TL 3494 7177 (CAU report 1126)

M Collins

An archaeological evaluation revealed a substantial ditch of probable prehistoric date; along with a smaller Romano-British ditch and a series of small, shallow post-medieval pits.

Papworth Everard, Hospital Car Park

TL 2921 6275 (NHA report 09/124)

S Carlyle & P Kajewski

Part of a Middle/Late Iron Age and Romano-British farming settlement was excavated prior to construction of a car park. Settlement on the site commenced in the Middle/Late Iron Age, although a polished Neolithic axe head was recovered from the site. Occupation at the site was continuous until the 4th century AD. Pits, ditches and gullies and a large enclosure boundary ditch cut through an earlier Roman boundary system suggesting a habitual use of the site along with significant quantities of pottery and animal bone. Medieval and post-medieval furrows also extend across the site from north to south.

Perry, Grafham Resilience Scheme

TL 1480 6550 (CAU report 1090)

L Billington & J Tabor

An archaeological fieldwalking survey was undertaken along the proposed route of a pipeline forming part of the Grafham Resilience Scheme. The fieldwalking survey produced very few finds and no notable concentrations of artefacts. Artefacts recovered were limited to six prehistoric flint flakes, six sherds of post-medieval pottery and a fragment of post-medieval tile. The quantities of artefacts present are consistent with 'background levels' likely to be present across the landscape.

Ramsey, Millfields Flood Alleviation Scheme

TL 2897 8552 (OA East report 1430)

L Bush

Evaluation revealed a number of probable marling pits, and two very shallow ditches (on separate alignments). The majority of the features were devoid of datable finds, although some contained post-medieval blue and white porcelain.

Ramsey, Ramsey Abbey School

TL 291 850 (OA East report 1368)

N Gilmour

A geophysical survey was followed by test pit excavation targeted at geophysical anomalies to determine if they represented parts of the original Ramsey Abbey buildings. The test pits showed that if archaeological remains survive on the site (as suggested by the geophysics) they are buried by more than 0.60m of post-medieval demolition and levelling layers. Finds shed some light on the medieval abbey, with pottery, ceramic and stone building material, painted glass, lead window and vessel glass amongst the material recovered. Overall, the project has shown that it is extremely likely that some major buildings were located to the east of Abbey House.

Shepreth, 26 Meldreth Road

TL 3905 4790 (OA East report 1343)

K Clover

Archaeological evaluation uncovered late medieval to post-medieval period land drains and field boundaries present in four of the five trenches. No evidence for remains relating to the medieval Manor of Doucraies was found.

Soham, land north east of Fordham Road

TL 6013 7248 (AS report 4017)

S Quinn

Archaeological features were identified in all eight trial trenches of the archaeological evaluation prior to the construction of a new residential area. Early Iron Age pits were mostly uncovered along with a post hole and a cobbled surface. A bone comb and pendant were recovered from the Iron Age features along with a small assemblage of pottery, animal bone and flint. Roman pits, ditches and gullies were uncovered in several trenches. The gullies were part of a field system and the ditches were a continuation of enclosure

ditches, and a trackway from previous investigations. Another, unrelated, cobbled surface overlaying a 2nd century Roman ditch was also recorded.

Soham, Gimbert Road

TL 5912 7370 (PCA report 11144)

N Pankhurst

An evaluation consisting of six trial trenches was carried out, followed shortly by a full excavation of the area. Three phases of activity were identified. The first phase was during the Late Bronze Age which was identified through a waterhole which contained Late Bronze Age pottery, animal bone and burnt flint. No further evidence of activity from this period was seen. The second phase was identified by Late Iron Age and 1st–2nd century AD pottery recovered from a number of northwest-southeast aligned ditches, relating to possible field system. 10th to 14th century AD pottery was recovered from ditches of a subsequent early medieval field system on the same alignment. This has been identified as the third phase.

Soham, 8 Market Street

TL 5942 7326 (OA East report 1390)

T Phillips

Excavation revealed a well preserved and well stratified agricultural soil measuring up to 0.5m thick. The buried soils at the base of this deposit yielded an assemblage of predominantly Early Iron Age material. Sherds of Late Iron Age, Roman and medieval wares occurred above this level. Several features truncated the agricultural soil including two potentially Late Iron Age ditches, a pit and at least one posthole. There were several post-medieval features including a wall footing and possible yard surface. The rear of the plot had clearly avoided any major modern truncation or disturbance; it had previously been sealed by concrete slabs and before that was back garden plots since at least the late 19th century. Part of an *in situ* clunch wall was visible on the surface and correlates with the eastern side of a small out-building on both the 1st and 3rd Edition Ordnance Survey maps.

Steeple Morden, Station Quarry

TL 3078 3939 (OA East report 1415)

R Atkins & S Graham

This excavation uncovered c. 600m of a Romano-British trackway known as the Avenell Way which linked Baldock in Hertfordshire to Cambridge. Forming a hollow way, it was heavily rutted and included smaller 'bypasses' around deeper, muddier areas and a causewayed section across a wide palaeochannel. The foundations of three small contemporary buildings were recorded along the south side of the trackway. Two post-medieval ditches and a modern posthole were also recorded. More than 200 tree holes were observed.

St Ives, land behind 1a East Street

TL 3145 7128 (OA East report 1327)

H Stocks-Morgan

Archaeological excavation located behind the main

market square in St Ives revealed well preserved archaeological deposits 0.9m below the modern ground surface. The earliest recorded activity on site was from the Early Saxon period, attested by the retrieval of pottery. The 12th to 14th century was characterised by the digging of several cess and rubbish pits, relating to the site's position within the backyard of a tenement plot. Following the 14th century, a period of disuse is evident coinciding with the Black Death epidemic. Activity picked up again towards the late 15th century when several inter-cutting ovens were constructed, which were shown to be used for making bread and small scale grain parching. The 16th to 17th centuries saw a return to the use as a backyard area, characterised by larger pits, for quarrying and rubbish disposal. There was some evidence for quarrying to the north of the site after the 17th century, however activity diminished, coinciding with the devastation of the town following a massive fire in 1689.

St Ives, Oldman Court, Cromwell Works, New Road
TL 3158 7102 (AS report 4092)

L Smith

A trial trench evaluation, consisting of five test pits, was carried out as part of land redevelopment at Oldman Court (Cromwell works, south side). The site has previously been subject to significant development including the construction of an embanked railway line in its southern part in the 19th Century. The evaluation revealed features comprising a ditch, gullies, and postholes with the gullies containing animal bone. A small amount of ceramic building material was also found, but no clear dating evidence.

St Ives, Wiggin Hill Farm
(Alison Deegan report 1213006)

Alison Deegan

An aerial photographic survey was undertaken from existing air photographs for land at and around Wiggin Farm. Levelled medieval ridge and furrow remains were identified as well as cropmarked evidence of possible Iron Age or Roman period activity in the form of ditches and enclosures, including a possible settlement.

St Neots, Church Street
TL 1860 6020 (AS report 3303)

A Newton, M Lally & P Stone

Archaeological excavation at Church Street, St Neots prior to residential redevelopment of the site revealed multi-period remains across the site, the earliest pits dating to the Late Neolithic or Early Bronze Age. The most significant features on the site were the Saxon and Saxo-Norman features that helped further characterise the known Late Saxon settlement previously investigated in close proximity to the site. These features represent possible enclosures or paddocks within the enclosed area of the settlement. The excavation also revealed further remains of the important post-medieval house of Hall Place that formerly lay towards the north of the site.

St Neots, The Wheatsheaf public house, 125 Great North Road

TL 1692 5877 (AS report 4016, 4034)

S Quinn, M Stoakley & Z Pozorski

Archaeological trial trench evaluation followed by further excavation of two open areas revealed two medieval pits and the series of post-medieval features which are likely to be associated with the former public house. The pottery and building material recovered from the medieval features dated between the 10th to 20th centuries with the majority of the post-medieval being 17th–19th century.

St Neots, Castle Hills House, School Lane

TL 1727 5880 (AS report 4024)

Z Pozorski and M Stoakley

An evaluation and further monitoring and recording, was carried out prior to the building of an extension of an existing dwelling. The investigations revealed two linear ditches, one of which contained Late Iron Age- Early Roman pottery and a fragment of loom weight. There was also a modern pit which contained a few disarticulated human remains. They are likely to have been redeposited and associated with the 'Castle Hills' (NHLE 1009629) immediately to the north-east.

Swaffham Prior, 37 Lower End

TL 5707 6460 (OA East report 1324)

R Atkins

Archaeological evaluation revealed two ditches dating to the Late Iron Age and Early Roman periods and a series of 18th-century quarry pits. Although the evaluation was within the area of a moated medieval manor (CHER MCB1467) called Shadworth, recorded in documents from AD 1330, no features dating to this period were found and only three residual medieval and late medieval pottery sherds were recovered. The evaluation was followed by a watching brief which recorded a ditch or pit running underneath the manor which is probably contemporary with the Late Iron Age/Early Roman ditches seen in the evaluation.

Swavesey, Swavesey Priory

TL 3626 6942 (OA East report 1391)

R Clarke

Archaeological investigation took place to assess the effect of rabbit burrowing on medieval and post-medieval remains at the site of Swavesey Priory (NHLE 1006914). Machine excavation followed by limited hand excavation revealed an area of medieval floors, hearths and probable pits (not excavated), truncated by ditches and pits of late medieval date. Probable post-Dissolution evidence was represented by ditches and dumped deposits. Later features include an 18th-century brick drain. Numerous finds including roof tile, pottery and animal bone were recovered in addition to many small finds, several of which may have originated from the Priory kitchen.

Water Newton, Land Adjacent to 2 Old Great North Road

TL 1092 9719 (AS report 4107)

C Leonard, M Stoakley & A Newton

An excavation was undertaken prior to the construction of a dwelling and garage. It revealed several pits and ditches. The majority of features were medieval and dated to 10th–13th centuries. These occurred mostly in the southern and eastern parts of the site. Boundary ditches recorded to the east were aligned broadly north-south. The remaining medieval features were to the west of these, suggesting the area could represent the interior of an enclosure bounded by these ditches. There was also a series of beam slots in the south which may represent a small structure, unlikely to have been as large as a dwelling or barn.

Westley Waterless, Land north of Home Farm

TL 6275 5607 (AS report 3940)

T Janes & M Stoakley

Evaluation prior to the building of a large equine marshalling unit revealed a boundary ditch thought to be of post-medieval date as the OS Map of 1886 depicts a boundary on the same alignment in the same area. No material culture for dating was retrieved.

Whittlesey, Baptist Church, 32 Gracious Street

TL 2688 9736 (AS report 4088)

S Quinn & M Stoakley

An archaeological trial trench evaluation was carried out prior to construction of a single-storey extension to the existing church hall, and modification to the car park and access routes. Several medieval pits and ditches were uncovered. Medieval pottery was recovered from the pits dated to the 13th to 14th centuries, along with a few post-medieval sherds contained within two other pits dated between the 17th and 18th centuries.

Whittlesford, Roman Bath House Mosaic at Nine Wells

TL 4518 4748 (IE report)

W Hughes

An excavation was carried out and located the *in situ* Roman mosaic. It was found to be on the surface of a semicircular bath laid on an *opus signinum* base extending to an area *c.* 60x15cm. As well as a large number of tesserae, pieces of painted plaster were also recovered along with some pottery which yet to be analysed and coins dating to the 2nd–3rd century.

Wimpole, Mr Ratford's House

TL 3409 5133 (CAFG report)

Following on from the 2010 excavations (ECB3831) three further evaluation trenches were placed at Mr. Ratford's house to establish the extent of the building on the west side and the south side. The excavations confirmed the 2010 findings and found the extent of the western 17th century building. Later additions to the building dating to the late 18th century were discovered on the south side, with wine bottles being recovered from the foundation trenches.

Wisbech, 3 The Crescent

TF 4621 0952 (NAU report 3036)

S Hickling

An archaeological watching brief during construction of an extension revealed a masonry structure thought to be a water cistern. In the same location on the 1887 OS map there is a water pump. No evidence of the medieval castle was recorded.

Wisbech, 12 Elm High Road

TF 4686 0835 (APS report 130/11)

P Cope-Faulkner

A watching brief was undertaken during groundworks over the site of the course of the post-medieval Canal opened in 1797 and closed in 1926. The watching brief revealed deposits associated with the infilling of the channel which probably date to the 1970s. These deposits lay beneath levelling and demolition layers which are probably associated with the most recent development at the site.

Wisbech, Somers Road

TF 4578 0946 (OA East report 1336)

J Fairbairn

This investigation revealed three small ditches and three postholes. A second trench was opened to examine a larger steep sided ditch, which was deliberately backfilled in the late 17th/early 18th century and would appear to post-date the other ditches on site. Earlier activity evidently occurred on (or close to) the site, with later medieval pottery present, however this is residual in nature and is mixed with later post-medieval ceramics.

Witchford, Manor Court

TL 5041 7893 (OA East report 1337)

T Phillips

Three evaluation trenches were machine excavated revealing a post-medieval ditch. This feature represents a small boundary which can be seen on the First Edition Ordnance Survey map, where it encloses a small building, adjacent to a track which is now Manor Court Road.

Woodditton, St Mary's Church

TL 6595 5916 (OA East report 1432)

A Haskins

A watching brief was undertaken and uncovered five *in situ* inhumations, a coffin and a small amount of disarticulated charnel remains. The inhumations were excavated and lifted where they would have been impacted on by the works; the remains were reburied during the backfilling of the trench in agreement with the Church Administrator. The inhumations are likely to have been medieval, although no definitive dating evidence was found.

Yaxley, the Broadway Library site

TL 1756 9233 (OA East reports 1377 and 1396)

A Haskins

Yaxley is a small town to the south of Peterborough, which lies around 6km from the Roman town of

Durobrivae at Water Newton. The evaluation trenches revealed two ditches, one of which contained Late Iron Age pottery. The evaluation was followed by a small excavation which found a large early Roman ditch. Its fills contained a large quantity of pottery kiln bars and other kiln furniture from a pottery production site, along with a relatively unabraded pottery assemblage consisting of some 400 sherds dating to c. AD 70–85. These constitute a potentially regionally important Roman pottery assemblage. The group includes most of a Roman cheese press.

The following sites produced little of archaeological interest:

Alconbury, Church of St Peter and St Paul
TL 1845 7613

Burwell, Reach to Burwell Rising Main Pipeline
TL56634 66490 – 58355 67334 (OA East report 1413)

Bury, 2 Owls End
TL 2831 8393 (MAS report 338/11)

Cambridge, land at 7–9 Abbey Street
TL 4625 5881 (AS report 4109)

Cambridge, Babraham Road Park & Ride Extension
TL 4770 5447 (OA East report 1352)

Cambridge, Manor Community College
TL4557 6073 (OA East report 1360)

Cambridge and Milton, Chesterton Station Sidings
TL 4745 6061 (OA East report 1401)

Cambridge, Saica Site, Villa Road, Histon
TL 4383 6278 (ECC report 2402)

Doddington, land between 60a and 62 Benwick Road
TL 3920 9087 (OA East report 1394)

Dullingham, Dullingham Motors site, 12 Brinkley Road
TL 6299 5775 (ASE report 4941)

Ely, 136 Lynn Road
TL 5438 8110 (AS report 4072)

Farcet, 243 Peterborough Road, Stanground, Peterborough
520194 295897 (OA East report 1387)

Gamlingay, Community Wind Turbine, Castle Farm
TL 2487 5107 (HN report 691)

Gamlingay, Green End Industrial Estate
TL 2339 5242 (OA East report 1381)

Harston, 53 London Road
TL 4356 5148 (OA East report 1373)

Haslingfield, 26 New Road
TL 4088 5240 (AS report 4105)

Huntingdon, Brampton Hut, A1/A14 Interchange
TL 1930 7192 (AS report 4030)

Litlington, 3 Anvil Avenue
TL 3128 4249 (AS report 4002)

Littleport, May Farm, Mildenhall Road
TL 6003 8725 (CAU report 1086)

Snailwell, Lynx Business Park
TL 63775 68066 (JMS report 2487)

Soham, land off Kingfisher Drive
TL 5860 7474 (OA East report 1417)

St Ives, New Road, rear of 7 Station Road
TL 3160 7110 (AS report 4093)

St Neots, Eaton Ford Green
TL 1767 6014 (AS report 3948)

Steeple Morden, Ashwell Road
TL 2833 4188 (OA East report 1342)

Swavesey, Trinity Foot
TL 3560 6590 (OA East report 1416)

Sutton, Haddock Rise
TL 4354 7856 (CAU report 1081)

Wimblington, land west of the Bungalow, Hook Drove
TL 4243 9389 (NAU report 3137)

Wisbech Town, Princes Foods, Lynn Road
TF 46420 10380 (OA East report 1358)

Wood Walton, land at Raveley Road
TL 2243 8067 (NA report 12/155)

Desk-based assessments were produced for the following sites:

Cambridge and Milton, Chesterton Station Sidings
TL 4745 6061 (OA East report 1353)

Fen Ditton, The Blue Lion, 2 Horningsea Road
TL 486 602 (CgMs report MC/13829)

Littleport, May Farm, Mildenhall Road
TL 6003 8725 (CgMs)

St Neots, ATS site, 22 Brook Street
TL1840 2601 (GEO report 2011/2543)

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